FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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Purina Officers Urge Complementary Tests By Colleges, Industry

By FRED TUNKS
Feedstuffs Staff

ST. LOUIS — Private and college research "should complement rather than duplicate each other" in the opinion of Ralston Purina Co. executives who welcomed a large group of scientists and officials representing dairy breeding, feeding and management interests before they toured the company's new dairy research center at Gray Summit, 40 miles west of here.

(Also see story on page 6.)

The group, representing 31 states, also heard these opinions: The farmer should remain independent by ob-

(Turn to PURINA, page 99)

Week's Broiler Egg Set 18% Over 1959

SALISBURY, MD.—Broiler chick placements and egg settings are reported to be running way ahead of a year ago.

Placements last week for the 22 important broiler producing states totaled 29,037,000. Although this was 2% below the previous week it was 11% above the corresponding week of 1959.

Hatcherymen in the 22 states set 41,401,000 eggs. This was 18% above the same week a year ago but 1% less than the week earlier.

Egg settings were down from the

(Turn to EGG SET, page 103)

Florida Fruit Losses May Hike Citrus Meal Prices Only Slightly

By Special Correspondent

ATLANTA, GA. — Uncertain forecasts of how much influence hurricane damage to Florida's citrus crop will have on citrus meal and pulp supplies and prices were being made late this week. And the general conclusion was that the effect on meal prices probably will be slight, even though the fruit harvest will be cut.

Observers estimated that recent storms wrecked 35-50% of Florida's grapefruit crop and 10% of the or-

(Turn to CITRUS MEAL, page 8)

Buffalo Strike Issues Shuffled by Courts; Millfeed Output Halts

By Special Correspondent

BUFFALO — Federal Judge John O. Henderson ruled Sept. 15 that the legal issues raised in the waterfront grain strike here should be returned to the State Supreme Court for settlement.

This action was seen as a victory for the eight elevator companies which are seeking an injunction to stop the nine-day-old walkout and are suing the striking union for $1,200,000 in damages.

The union, Local 1286, Grain Elevator Employees (AFL-CIO), earlier

(Turn to STRIKE, page 103)

FEEDSTUFFS *Features This Week*

INDUSTRY ROLE—The feed industry's role in the changing agricultural economy is discussed by an industry executive on **page 68.** This is one of several production-related features in this issue, as the industry focuses attention on plant operations at the annual Feed Production School Sept. 21-23.

MODERNIZATION—The necessity of plant modernization and procedures to follow are outlined by an engineer on **page 60.**

PLANT DESIGN—The trend has been toward smaller and often more specialized mills, says a production expert. **Page 92.**

NEW FACILITIES—Operation of an Indiana firm which added new mill and bulk facilities is described on **page 18.**

COASTAL BERMUDA—A new plant is pelleting Coastal Bermuda in the first commercial production of the grass in pellet form in Georgia. **Page 28.**

FINANCING—The poultry industry is doing an increasing portion of its financing internally, says an economist. **Page 46.**

— REGULAR FEATURES —

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At Iowa Feed Conference . . .

Processing Controls, Prompt Use of Feed Said to Aid Nutrient Stability

By FRED TUNKS
Feedstuffs Staff

AMES, IOWA — The necessity of adequately controlling manufacturing processes and conditions and the importance of selling and using feeds promptly after mixing to insure nutrient stability were emphasized Sept. 13 at the one-day Iowa Feed Conference here on the campus of Iowa State University.

Questions related to microingredient stability problems were traced by Dr. Stanley Balloun of Iowa State University's poultry husbandry department, and Marvin Rohlf, nutritionist for Golden Sun Milling Co., Estherville, Iowa, to environmental conditions, chemical reactions and feed "shelf life."

Dr. Balloun noted that ingredients which created the most serious stability problems are those which are: (1) Used in small quantities or have narrow tolerances, (2) relatively expensive and/or (3) easily altered by chemical or physical means.

Dr. Balloun listed these factors which affect nutrient stability:

1. Chemical breakdown through oxidation.
2. Physical effects, including moisture pickup; clumping (i.e., fats may

(Turn to IOWA, page 104)

Quaker Oats Reports Largest Feed Volume In Areas Now Served

CHICAGO—The Quaker Oats Co. this week reported that its feed margins have been affected adversely but that "in the areas which we are now serving, we have enjoyed the largest feed volume in our history."

The comments on the feed business were part of Quaker officials' report

(Turn to QUAKER OATS, page 103)

Increasing Consumption of Eggs, Poultry Major Topic at Dixie Poultry Exposition

By ROBERT H. BROWN
Feedstuffs Special Correspondent

ASHEVILLE, N.C.—How to lure the housewife into buying more eggs and poultry was the main theme at the 15th Annual Dixie Poultry Exposition held in the city auditorium amid two floors of exhibits by suppliers of both feed and equipment.

Poultrymen from four southern states—South Carolina, North Carolina, Tennessee and Georgia—as well as a sprinkling from other states heard talks on how to increase consumption by getting more and better display in supermarkets for broilers as well as how to encourage more people to eat a large breakfast. Also, discussions were held on sexing birds, labor relations and the always-present subject of contracts.

Pointing out that prices have increased on eggs recently, R. M. Hendrickson, market manager, poultry

(Turn to DIXIE, page 4)

Film on Bin Flow Problems to Be Shown

KANSAS CITY—"A dramatic visual presentation" is the way members of the Feed Production School committee described a new film on "Problems of Bin Flow." The sound and color movie, viewed by the committee in a private screening session last week, will be given its premier showing during the Feed Production School in the Hotel Continental here

(Turn to FILM, page 99)

Flock Cut Is Step in 'Right Direction'

But Reversal in Egg Demand Drop Said To Be Serious Need

WASHINGTON—The reduction in the size of the layer flock and current and prospective declines in egg production are in the right direction if the egg price situation is to be brighter, a leading economist states. But, he adds, unless the decline in consumer demand for eggs is reversed, there is no assurance that these adjustments are enough to assure egg producers that they are out of the woods.

Edward Karpoff, U.S. Department of Agriculture economist, points to the data indicating that egg production in 1961 will be smaller than in 1960, following a dip this year from the previous year.

At the same time, he points out that the national appetite for eggs has been declining.

"Until there is a noticeable re-

(Turn to FLOCKS CUT, page 103)

• • •

Potential Layer Total Off 7%

WASHINGTON — The number of layers on farms Sept. 1 was down 4% from the same date a year ago, the U.S. Department of Agriculture notes in its latest crop report.

The decrease reflects the decline this year in chicks raised for flock replacement. Pullets not of laying age on Sept. 1 were estimated 14% less than a year earlier.

Potential layers (hens and pullets of laying age plus pullets not of lay-

(Turn to POTENTIAL, page 8)

Nutrena Outlines Views Of Ag Change, Sales Plans, Dealer's Role

CHICAGO — Emphasis on developments to meet the increasing need for specialized feeds and production systems . . . belief that dealers who make necessary adjustments to the new agri-business economy will be the dominant force in distribution . . . concentration on the average feeder, who will represent the feed industry's biggest market in the 1960's.

These were among the points expressed by officials of Nutrena Feeds in talks outlining company views and plans at recent sales and dealer training meetings.

More efficient farm animal production and an increasing need for more specialized feeds and production systems were predicted for agriculture in the 60's by James C. North, president of the Minneapolis-headquartered firm which serves a wide area of the country.

Mr. North's forecast of greater use

(Turn to NUTRENA, page 8)

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The regional circulation of this issue is concentrated in the southeastern states

Top of the Hopper

MERGERS IN THE BROILER business are in vogue for the 1960's, Richard T. O'Connell, public relations director of the American Poultry & Hatchery Federation, says: "It is reported a number of companies in one broiler area are seeking the advice of a management consulting firm on the advantages of merger. Companies outside the immediate industry but in the food field, are known to be probing for investment opportunities as the industry leans away from ice-packed broilers and into 'specialty products.' Several firms have approached the Securities and Exchange Commission for permission to sell publicly stock in integrated broiler enterprises." Mr. O'Connell comments further that companies wanting to lead the way in the next few years will probably need the talents of those well-trained in financing, corporate mergers and with professional skill in marketing brand name products.

FEED COMPANIES SHOULD take a hand in new poultry product development since they have more to gain than anyone else in increased use of poultry, according to Jesse Jewell of Georgia, a top man in the broiler business, in an interview reported by Broiler Business. "They also have the money to do the job adequately," he adds. Mr. Jewell, whose firm has recently introduced a number of frozen "wife-saver" poultry products such as chicken fillets and chicken stew, says that new products can get the industry away from price as the only selling method and also offer opportunity to get more money for certain parts of the birds such as the neck, wings and back by processing them into premium products.

THE FOOD AND DRUG ADMINISTRATION is making plans to renew its request that Congress remove the "grandfather's clause" from the Food Additives Law. Also, officials are said to be studying some data on stilbestrol presented at the meeting of the American Chemical Society in New York recently. Meanwhile, feed and additive industry leaders have met to discuss the approach to be used in an attempt to overcome the Delaney problem as it applies to feeds. What direction these efforts will take has not yet been announced.

PENNSYLVANIA STATE UNIVERSITY is taking the lead in attempting to establish a new word to describe agriculture in broader terms. The word is "agindustry," coined by Dr. Lyman E. Jackson, dean of the College of Agriculture at Penn State. The university's agricultural communications department, which plans to use the new term in college releases, points out that "since agriculture is a mature industry in its own right, a more comprehensive word is needed to give proper meaning to its total scope. This word may well be agindustry, if it gains acceptance through explanatory introduction and gradually accelerated use."

The somewhat popular word, "agribusiness," seems appropriate mainly in communications linked to the business phase of agriculture. Agindustry seems to suggest more adequately the whole industry of agriculture, including farming, business and other operations, Jack F. Schinagl, head of agricultural communications at the college, contends. Also, he points out that agindustry can be made into an adjective—agindustrial—while agribusiness doesn't lend itself to this conversion.

THE SCOPE OF THE AMERICAN agindustry (we'll give the new word

(Turn to TOP OF THE HOPPER, page 99)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

The first half of September has marked the month as one which may introduce considerable improvement in manufactured feed business throughout the land. Trade representatives in most regions report that demand for many feeds is growing steadily and production is running ahead of like periods last year. Settlement of the Pennsylvania Railroad strike has eliminated a serious transportation problem for eastern manufacturers, but still to be reckoned with are mill and elevator worker strikes at Chicago and Buffalo. Hog prices climbed again this week, and the hog-corn ratio, based on Chicago prices, stood at 13.8, an improvement over last week's ratio of 13 and considerably better than the 11.2 mark of a year ago. An advance of .6 was recorded in the wholesale feedstuffs price index. This week's index of 74.4 stands .2 better than a year ago. The U.S. Department of Agriculture said grain sorghums proved the exception in the general advance in feed-grain prices, and the index gained 1.5 points. However, this week's index of 64.4 was still below the 65.5 mark of a year earlier. (Feed markets in detail on pages 100-102.)

Northwest

Attitudes of feed business observers in the Northwest are mixed. They range from gloomy to bright, but there's one point of agreement: Most farmers still need extensive credit to buy orders of any size.

Most manufacturers seem to be running ahead of last year, but the increases vary from plant to plant.

Business should be better now than a year ago, one trade representative said, because hogs are nearing market weight, turkeys are being pushed for the holiday markets and agricultural economic conditions are generally improved over what they were last year at this time.

Corn Belt corn, which some had feared might not mature before frost, is believed by many to be out of serious danger. Hog prices have slipped since the highs of the summer, but this trend, say the experts, may keep them at a favorable level for a longer period of time than if the peak had been sustained. Egg prices are holding about 20% higher than last year at this time.

Southwest

The first signs of the normal seasonal pickup in formula feed business were evident this week. Trade sources reported dealers showed some inclination to take on some cattle feed stocks and the feeling was evident that volume of this line should be increasing.

While there are considerable turkeys being sold at this time, the volume of turkey feed is probably at its seasonal peak and is providing a good part of the total amount. Egg feed sales are spotty but appear to be slightly improved. Dairy feed and hog feed sales are also contributing a good share of the total run.

Most mixers were operating on a five-day basis this week; however, some sources term it as a slow five days.

Mixed ingredient prices should not lend any major influence this week as the average will remain about the same.

Some mixers are concerned about the possibility of certain railroad strikes. This is only affecting the mixers that are serviced by single railroads that might walk out. Most feel that this will not influence the overall picture in the area.

Northeast

A flurry of legal moves has compounded the confusion in Buffalo's waterfront grain strike. As a result, Buffalo's local supply of millfeeds has almost dried up and ex-lake grain offerings are unavailable.

The strike became further snarled Sept. 14 in a dispute over which court —State Supreme Court or Federal Court—should have jurisdiction over legal issues raised by the strikebound employers. One spokesman said jurisdictional disputes "could tie up everything for weeks."

A trickle of millfeeds, at somewhat higher prices, still is available at Buffalo. But supplies are being shipped in via railroads from the west, which adds to operating costs.

The strike which shut down eight elevators and four flour mills in Buffalo stems from a dispute between Local 1286 Grain Elevator Employees and the Buffalo Terminal Grain Corp., operator of the Connecting Terminal Elevator. The dispute was an offshoot of the recent Pennsy strike.

A fifth flour mill has also closed because it ran out of grain.

Formula feed sales held about steady during the week. Dairy feed sales are going along good, with an increasing amount of concentrates showing up in the tonnage. Complete feeds are expected to taper as harvesting progresses and on the farm feeding mounts. Oats and barley are already in and corn will come soon, especially if it is hastened by frosts. Turkey feeds moved well but some growers are slaughtering their birds and putting them in storage. Broiler feeds are slipping, while egg mashes are holding very nicely.

Egg prices were up a little, but broilers have seen their best days for a while and edged lower.

Grains strengthened in the ingredient market, with some of the rise caused by a lack of ex-lake offerings.

Running time of formula feed manufacturers has been averaging 36 hours.

Southeast

Feed business in the Southeast has remained practically unchanged for the last several weeks. However, cattle feed business is showing signs of improvement and several southeastern ranchers are beginning to increase their usage of proteins and roughages.

Fairly heavy offerings of broilers this week caused the market to decline an additional ½¢ lb., making the price, f.o.b. the farm, 15-15½¢ lb.

Fairly heavy buying of new crop cottonseed meal in Carolinas has caused the mills to up their asking prices of cottonseed meal as much as $2-$3 ton. More oil mills are beginning crushing operations in the Mississippi Valley and buying interest hasn't amounted to anything, so prices have decreased $1-$1.50 ton and many believe that there will still be a further decline in prices.

New crop corn is now being harvested, and prices declined as much

(Turn to MARKETS, page 105)

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TOP PRICE FOR HOGS STAYS AT $16.75 CWT.

CHICAGO — Top hog prices here remained at the $16.75-cwt. level at week's end. This steady trend of several days' duration was considered by some market observers to be an indication of favorable prices for some time to come.

Chemell Creditors To Meet on Expenses

GAINESVILLE, GA. — A meeting of creditors of the bankrupt Chemell hatcheries will be held in Gainesville Sept. 26 to consider payment of attorneys' fees, administration and trustee expenses amounting to more than $82,000 incurred since the original petition was filed Aug. 5 a year ago.

J. Ellis Mundy, referee in bankruptcy, said that while the report of trustees indicated approximately $1,165,000 was available for these payments, no claims of general creditors with unsecured claims will be considered at this meeting.

The attorneys filing the expense claims represented the debtor in possession and the creditors' committee during the litigation and the subsequent efforts to liquidate the assets.

Capital Comment

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

An Itchy Case

WASHINGTON — The Food and Drug Administration chief, George Larrick, recently fell afoul of an infection. He was treated by a local doctor, who prescribed a new penicillin drug. Mr. Larrick is now back on the job feeling well and healthy, but he told this reporter that the reaction from penicillin erupted a fine case of hives.

One may recall the yarn about a one-armed painter with the hives. George says it was little less than that. However, the local doctor handled the hives through orthodox medicine. But the FDA chief relapsed into a lassitude which had him in bed for a week.

Mr. Larrick comments that only a month before his injection of this new product, he had okayed that drug for general use.

The FDA chief promises not to use his personal experience against future use applications for new penicillin preparations. But he is or was a very unhappy guy.

Hales & Hunter Co. Reports 5 Promotions In Operations Division

CHICAGO—Five recent promotions in the operations division of Hales & Hunter Co. have been announced by Dr. S. B. Lee, vice president and director of operations.

Herman L. Rodenburg, formerly mill manager of the company's Red Comb Pioneer Mills, Inc., Cartersville, Ga., has joined the operations staff in Chicago; James W. Boyd has succeeded Mr. Rodenburg as manager of the Cartersville mill; Delbert H. Leweke has replaced Mr. Boyd as manager of the Springdale, Ark., plant; Allen W. Wietlake has succeeded Mr. Leweke as manager of the quality control department, and Jay W. Midtlyng, quality control supervisor of the Marshall, Mo., mill, has assumed the position of assistant manager of quality control.

Mr. Rodenburg has been with Hales & Hunter since 1925 and has held a number of managerial posts within the operations division.

Mr. Boyd, who joined the company at its Marshall plant and was later promoted to mill superintendent there, has most recently served as mill manager of the company's Red Comb Pioneer Mills, Inc., in Springdale.

Mr. Leweke began his career as an analytical chemist in the company's research and analysis laboratories. He has subsequently held the positions of chief chemist and manager of the quality control department.

Mr. Wietlake joined the company in 1955 as quality control supervisor at the Cartersville mill. Most recently, he has served as manager of inventory control and assistant manager of the quality control department.

Mr. Midtlyng joined Hales & Hunter in 1951.

Decision Expected In Merger Proposal

ATLANTA—Announcement is expected on a proposed merger under study by Coca-Cola Co. and Minute Maid Corp. Negotiations have been held in New York and at Coca-Cola headquarters here by officials of the two companies.

The merger reportedly would be on the basis of 2.2 shares of Minute Maid common stock for one share of Coca-Cola common. Coca-Cola has assets listed at $309 million and Minute Maid assets are listed at $81 million.

Minute Maid, in addition to producing citrus pulp for feed, makes citrus oils and other by-products but is known primarily as one of the leading producers of frozen concentrate juices.

NITROFURAN SYMPOSIUM—Dr. W. P. Garrigus (left), head of the University of Kentucky animal husbandry department and associate director of the Agricultural Experiment Station, was chairman for the third National Symposium on Nitrofurans in Agriculture held on the university campus in Lexington Sept. 8-9 (Feedstuffs, Sept. 10). With him (left to right) are other prominent participants: Dr. Paul D. Harwood, vice president and director of research, Hess & Clark, co-sponsor of event; Frank N. Getman, chairman of the executive committee, Hess & Clark, and Frank J. Welch, dean of the College of Agriculture and director of the experiment station. Scientists from a dozen universities presented reports on animal and poultry experiments with products in the nitrofuran family of chemicals.

DIXIE

(Continued from page 1)

feeds, General Mills, Inc., Minneapolis, said this should not deter the industry from encouraging people to eat more eggs for breakfast and at other meals, while the industry itself continues to develop new uses and new markets.

"It is about time for us to face up to the job before us," he said. "It is a job which cannot be performed by one man or one company. It must be concerted endeavor by as many responsible people and responsible companies as can be mustered together." He called for better salesmanship and promotion on the part of the egg industry.

"Our real competition is the processor of other foods who is doing a better job of originating new products and selling them to consumers," he said. "Remember, no one has to buy any one food item; there is usually an available substitute. Over 60% of the items on the grocer's shelves today were not there in that form 10 years ago."

Against this background, the egg industry is working toward finding more and better ways to use eggs and increase the appeal to the customer.

Mr. Hendrickson urged producers to start promoting shell eggs locally in every manner possible. Seventeen percent of the people in metropolitan areas no longer eat breakfast. The industry should launch a drive to get people to eat once again a hearty breakfast of eggs, ham and bacon, and then eat a light lunch, he said.

Egg dealers should seek out new local markets which can be developed immediately while research continues for new products, for example the school lunchroom programs and possibly such a thing as an "eggburger."

Much of the supermarket buying today is unplanned by the customer, and the right sort of promotion could throw a considerable portion of purchases toward shell eggs, he said. This impulse buying constitutes 50.9% of a customer's purchases.

"But, only 28.6% of egg purchases were unplanned," he said. "There were only four items with a lower percentage of unplanned purchases."

Available supplies of eggs shrank about four eggs per person in 1959, but demand shrank even farther. The U.S. Department of Agriculture's newest estimates show 1959 consumption of 345 eggs per person.

"New product development and consumer education is desperately needed to avoid total disaster," he said.

Normally, it takes from three to four years to take a product from the idea stage to the supermarket shelf, and this is why local egg sales people should start promoting shell egg consumption immediately, he said.

"In order to operate profitably in the future we must coordinate production with marketing so we can deal from a position of strength when selling to retail outlets," Mr. Hendrickson noted. "The future health of our business depends on new product development, modern marketing, planned production and increased consumer education. Now, we must all participate and cooperate as a unified industry working toward a common goal through our state and national poultry organizations, even though we may be competitors individually on a day to day basis" in urging more store demonstrations on how to buy and use eggs and tie-ins with producers of bacon, ham and other products.

Increased public reception of frozen tray packs of cut up poultry was foreseen by Dr. Cliff D. Carpenter, consultant, Arbor Acres Farms, Inc., Laguna Beach, Cal., but he urged the industry to seek better and more prominent displays of frozen, as well as chilled poultry, in the meat departments of stores, rather than in the frozen food display cases in other sections of the stores.

The average woman shopper spends 24 minutes in a supermarket of which 11 minutes are at the meat departments, he said. "Frozen cut-ups must be at the meat counter in order to compete with red meat."

An editor of a food publication, he said, has stated frozen foods are destined to take over in the next five years and acceptability by the customer is on a rapid rise, as those who have had prejudices in favor of ice packed birds decrease in numbers.

"The number of metropolitan consumers who prefer to see a bird with its head on are declining rapidly," he said.

Housewives often buy five or six fresh chickens and put most of them in a home freezer for future use. If she is convinced of quality and uniformity, why should she not buy them already plant-frozen? he asked.

"But we should not forget that if a woman spends 46% of her shopping time at the meat counter, then chickens must be sold at the meat counters," he said.

Dick O'Connell, American Poultry & Hatchery Federation, Kansas City, cautioned delegates that labor problems are going to continue in the poultry field, and said that the more the industry integrates, "the more vulnerable it will become to labor problems."

He pointed out that unions have sought to organize agricultural workers in California, and he predicted that efforts will be made to bring wage levels in the South more in line with other sections.

Some leaders, he said, believe an effort is being made to seek control of the food industry by labor unions, because it offers a lucrative field of 2 million unorganized workers.

Invasion of transportation unions into the agricultural fields could be most effective, he said.

He said members of the industry should work more closely with trade associations regarding labor and, "whether we like it or not, industry, in general, is headed toward higher cost levels. More qualified men should be hired with an eye toward better production."

Instrument chick sexing offers advantages labor-wise, J. P. Moore, Newton (Iowa) Chick Sexing Co., said following Mr. O'Connell's speech. He also revealed that more and more broiler hatcheries are now turning toward this method of sexing.

An afternoon session was devoted to turkeys, at which time Dr. Edward C. Naber, Ohio State University, said there is a tendency to overfeed turkeys on protein, and that growers could gradually reduce it per pound in three levels. He also suggested more efficient feeding by sexing.

Contract production of turkeys is here to stay and offers many advantages, Vick Holt, Hales & Hunter Co., Chicago, said. Feed companies are seeking out contractors and growers are seeking out feed companies for contracts, he said.

USDA BUYS TURKEYS

WASHINGTON—This week USDA bought 4.1 million pounds of frozen ready-to-cook turkey from 24 bidders. Acceptance prices on the turkey to be used in the school lunch program ranged from 34.74 to 36.95¢ per pound, according to the report.

Bids were made by 48 individual firms on about 16.8 million pounds. Deliveries will be made during the period Oct. 3-29.

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Later in colonial America, the greased pig contest gave emphasis to use of the phrase "bring home the bacon."

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FOR FEEDS WITH A FUTURE

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'Better Foods from Better Feeds' Is Minnesota Theme

By WILLIAM BENTZIN
and RUSSELL TOKHEIM
Feedstuffs Staff

ST. PAUL—College scientists outlined recent nutritional research and outside speakers warned feedmen to follow medicated feed regulations Sept. 12-13 during the 21st annual Animal Nutrition and Health Short Course here.

"Preparing High Quality Feeds and Feeding for High Quality Products" was the theme of the University of Minnesota-sponsored program, and all talks revolved around this theme.

Industry and feed control personnel spoke on quality control and cautioned feed men to follow regulations on medicated feeds particularly.

University personnel outlined nutritional effects on milk, veal, pork, beef and eggs. Presentations were also made on the production and handling of quality eggs.

Summaries of the talks follow:

STATE FEED CONTROL—The increased complexity of state feed control work as a result of continuing developments in nutrition and disease control was pointed out by R. E. Bergman, Minnesota control official, as he traced provisions of the law and regulations and commented on certain control problems. He also warned feed men against possible violations and residue problems in connection with medicated feeds. And he expressed the view that control work might eventually have to go to biological testing rather than chemical analysis.

Mr. Bergman mentioned that there recently has been some evidence that ingredients are a source of animal infections and disease. He said specifically that some animal by-products may be the source of salmonella infections in turkeys. This, he added, may mean that raw materials and processing procedures may be subject to investigation, testing and inspection. Currently the national control group has appointed a referee to study techniques of determining infections.

The cranberry situation last fall, Mr. Bergman commented, was an indication that the feed and livestock and poultry industries should guard strictly against misuse of additives so as to avoid any residue problems. It now appears, he said, that the control official must be concerned not only with proper labeling but proper use of feeds. No longer can a person have just anything mixed that he might order.

Mr. Bergman went on to say that in too many instances, it is discovered that a manufacturer does not provide a non-medicated feed for finishing, following use of a feed which is to be withdrawn prior to slaughter. Possibly, he said, it may be necessary to require an additional sale of a non-medicated feed along with the medicated feed.

The control official emphasized that his department is aware that some mixers are violating the regulations in regard to use of drugs by mixing feed as a customer formula order and avoiding the necessity of registering a feed, knowing that the registration would be refused. Arguments in favor of this, including a prescription by a veterinarian, may be acceptable so far as the birds and animals are concerned, but some of the combinations have not been cleared by FDA, and any residue situation from non-approved use could seriously damage industry.

Mr. Bergman noted that treated grain is sometimes diverted from human to feed use, but treated grains are considered adulterated when used in feeds. Also, while grain with weevils might be considered save, its use in feed would result in mis-branding since it would be considered adulterated. In modern use of grains, he observed, grain for animal feeds must be just as suitable as grain for human food.

Labeling has become very complex, Mr. Bergman commented, and "in the future quality may be measured in a different manner . . . In the future we may have to go to biological testing. For example, a chick starter might be checked for feed efficiency." Control officials might depend on university scientists for information on feeding result averages, he said, and then check and report results against such averages. One state is doing this on a tentative basis. In Minnesota, groundwork has been laid for this kind of testing, but more funds will be needed. The first several years of this type of work would be experimental, Mr. Bergman said, but later it might be a principal type of feed control.

FEDERAL FEED CONTROL—The changing pattern of the feed industry from the viewpoint of the Food and Drug Administration and the impact of the food additives amendment, including the Delaney clause, were noted by A. Harris Kenyon of FDA's Minneapolis district. In connection with the Delaney clause situation, he cited problems because of the grandfather clause or prior sanction situation, and he mentioned that FDA officials recommended that this situation be ended and that there also be an exemption when there are no residues of an additive in the end product.

Mr. Kenyon reminded feed men of the various provisions of the food and drug law, and he noted that inspectors are calling on feed plants, checking on controls and procedures needed in a plant to comply with regulations.

APPLICATION OF QUALITY CONTROL—Robert C. Wornick, chemical engineer for Chas. Pfizer & Co., Inc., agricultural development department, Terre Haute, Ind., spoke on "Your Future Depends on How You Apply Quality Control."

Mr. Wornick emphasized that "proper quality control gains and holds customers in spite of competition. It also builds confidence in the minds of employees."

He commented that every employee in every mill, without exception, is responsible for product quality. "The feed manufacturer without adequate quality control is operating like a man without eyes. He can stumble along for some time, but any slip-up can be serious."

He defined quality control operation as: Establishing appropriate standards and controlling operations to meet these standards.

"In large mills, the quality control functions are generally allocated among several departments and only the actual laboratory testing is called 'quality control.' As a result, one large feed manufacturer has estimated that his quality control costs are lower than that of the label sewn on the bag. Unfortunately, laboratory personnel and operations seldom are expanded as rapidly as production volume increases, which makes it difficult to determine true quality control cost changes."

Mr. Wornick said that in medium and small mills, innumerable activities performed daily by several people could properly be called a part of quality control. Some of these are: Inspecting of incoming ingredients, bulk and bag vs. specifications; assigning storage areas and insuring rapid turnover for freshness; maintaining records of ingredients and products; housekeeping; checking equipment performance and condition regularly; preparing and handling tags and labels and assigning lot numbers; checking finished products against specifications; insuring accurate bag and truck weights and neat packages; laboratory testing and maintaining file samples; obtaining and interpreting feeding trial data, and instructing employees on importance of their jobs and risks of errors.

The speaker suggested centering responsibility for all such activities in one person. "This would obviously increase effectiveness and free others for tasks in which they are better trained," he said. "There are distinct advantages to having the quality control head reporting directly to top management, rather than to the plant superintendent or production supervisor."

Mr. Wornick stated that a more effective quality control program may or may not require more manpower. As an example, he said, "In a 50 ton per day mill, adding one full time quality control man has been estimated to cost about 50¢ per ton. However, the resultant returns would go a long way to offset this modest expense."

FEEDING FOR QUALITY PORK PRODUCTS—"The most feasible and lasting method of improving the quality of pork and pork cuts is to develop lines of swine, or to locate those breeds and lines, that will gain rapidly and efficiently on a typical Corn Belt ration and still yield a high percentage of four lean cuts at slaugh-

(Turn to MINNESOTA, page 103)

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Dick Blomfield Heads Northwest Association

MINNEAPOLIS — Dick Blomfield, Blomfield-Swanson, Minneapolis, was elected president of the Northwest Feed Manufacturers Assn. Sept. 12 at the group's first meeting of the 1960-61 season. He succeeds A. H. Roffers, Farmers Union Grain Terminal Assn., St. Paul.

Ogden Confer, Hubbard Milling Co., Mankato, Minn., was reelected as a vice president. Also named vice presidents were L. O. Kindstrom, Kindstrom-Schmoll Co., Minneapolis, and Clifford J. Olson, Glencoe (Minn.) Mills.

Robert E. Cunningham, Percy Kent Bag Co., was elected secretary, and Ivan Scanlan, Minnesota Linseed Oil Co., was named treasurer.

Elected or reelected to the board of directors were Mr. Roffers; Ted Harstad, Doughboy Industries; J. H. Conlee, Osborne-McMillan Elevator Co.; Mr. Confer; Mr. Kindstrom; Mr. Olson; George Gates, Feedstuffs; D. M. Runke, Supersweet Feeds; John Weddle, Russell-Miller Milling Co.; E. C. Fuller, Nutrena Mills; Fred Dehning, Fred G. Dehning Co., and A. P. McMaster, Industrial Molasses Corp.

The meeting, held in connection with the Minnesota Animal Nutrition Course, took place at the Calhoun Beach Hotel in Minneapolis.

Purina Opens New Dairy Unit

FROM THE AIR—Nearly all buildings which comprise Ralston Purina Co.'s new dairy research center are shown here: Foreground, hay storage and pen stable barns; upper center, milking parlor and feeding room; upper right, maternity and test cow barn; top, calf barn.

By FRED TUNKS
Feedstuffs Staff

GRAY SUMMIT, MO. — Ralston Purina Co.'s brand new dairy research unit was the center of attraction for some 350 visitors when they toured the St. Louis feed manufacturer's Gray Summit research farm here early this week. Agricultural college deans and dairy specialists, and representatives of dairy breed associations, equipment manufacturers and the press helped Purina informally dedicate its new research center, which incorporates modern techniques of milking, milk handling, housing and feeding.

Buildings which comprise the new dairy research center include: Milking parlor, maternity and test cow barn, calf barn, dry cow and heifer barn, two hay storage barns and a pen stable. The unit is designed to handle four lots of 25 experimental animals—a total herd of 100 milking cows. Facilities provide for the care of calves, developing heifers and dry cows.

To Feed Room First

Cows in milk enter a feeding room before they are milked in a pit-type parlor which accommodates six cows at a time. Purina dairy rations are fed by hand according to the individual requirements of cows in the herd. Purina herdsmen said the cows are fed their concentrate ration before they are milked to give them more time to eat and so that experimental conditions can be adequately controlled.

Depending on conditions of experiments, cows are held in the "loafing" and feeding area continually or allowed to roam on pasture when not in the feeding barn or milking parlor.

Barns are equipped with automatic manure cleaners. Solid materials are hauled to fields, but liquid manure is piped to a nearby man-made lagoon which has proved to be a satisfactory means of disposal. Wastes other than manure, such as "clean-up" drainage from the milking parlor, also are emptied into the lagoon.

Registered Cows Introduced

Purina has been involved in dairy research for more than 30 years. A grade Holstein herd was started in 1929—and until 1958 all replacement females came from the Purina herd. Since 1958, a group of registered Holstein heifer calves has been purchased each year for research in the Danforth Farm Youth Center at the Gray Summit research farm. As research in the center is completed, animals are added to the dairy research herd.

"Through proper feeding, breeding and management," said J. C. Thompson, dairy research manager, "the herd has increased its average production from 6,800 lb. of milk per cow at the beginning to more than 14,000 lb. each now."

A herd of grade Guernseys was started in 1935 and is still a part of the dairy research herd.

Elevators Planning Information Program

CHICAGO—Decision to establish a 10-man task force on government grain operations has been reached by the country elevator committee of the Grain and Feed Dealers National Assn., it was announced here.

Leland Miller, Cedar Rapids, Iowa, committee chairman, said he will proceed immediately with the formation of the new unit.

Its continuing mission, he said, will include the following:

1. Assembly of all data bearing on the problems of the country elevator industry in storing and handling grain for the Commodity Stabilization Service.

2. Preparation for future negotiations with government agencies as to

(Turn to ELEVATORS, page 103)

Life Cycle Program For Broilers Planned

NEW YORK—A new "Life Cycle Program" for broilers—featuring a three-point health program to help control disease losses—is being launched by Chas. Pfizer & Co., Inc.

"The life cycle approach to more profitable broiler production is based on an urgent need in many flocks to reduce disease and stress problems that plague growers," a Pfizer spokesman said.

"Both breeder flocks and market birds are covered by the life cycle concept to improve disease control. Disease treatment through the feed, water and by injection is included in the recommendations."

Agricultural researchers for the firm said that they have pooled their recommendations for the antibiotic Terramycin to construct a "formidable health program that offers the greatest benefits during three periods." They listed these as follows:

1. Times of actual disease outbreaks. "In the case of CRD," say Pfizer scientists, "it is necessary to utilize the broad-range effectiveness of a drug such as Terramycin that can deal with many of the problems of mixed bacterial infections."

2. During or following outbreaks of other diseases, such as Newcastle, against which the antibiotic is not effective. "Terramycin," the researchers say, "delivers supportive help to treat or prevent secondary diseases or mixed bacterial infections which commonly attack birds in a weakened condition."

3. During key periods when stresses occur in the broiler's life cycle. "This antibiotic control program is vital for such stresses as vaccination, sudden weather changes and the last two weeks prior to marketing," the scientists say.

Literature explaining the new Life Cycle Broiler Program will soon be made available. The program is slated for major promotion this fall.

The program, officials said, is an educational effort to alert broiler producers to the dangers in latent stresses that increase throwouts and hike costs.

Roanoke Firm Confirms Committee of Creditors

By Special Correspondent

ROANOKE, VA.—Naming of five men to a committee of creditors was confirmed this week by Emmet M. Williams, Jr., president and general manager of Lindsey-Robinson & Co., Inc., the feed and flour firm here which Aug. 26 announced it would cease milling operations.

Members of the creditor committee are: Joe R. Williams, Salem, Va., General Mills, Inc. (chairman); G. Don Whitmore, Harrisonburg, the Fox Co.; J. W. Reynolds, Roanoke broker; W. P. Danforth, Appalachian Power Co. of Roanoke, and Fred C. Niederhauser, retired Roanoke businessman.

Their appointments to the committee had been on a temporary basis since a meeting of creditors in Roanoke Aug. 30.

Lindsey-Robinson's board of directors decided last month (Feedstuffs, Aug. 27) "to cease business operations, except to the extent necessary to liquidate the company's business in an orderly manner and to arrange for the proper distribution of its assets among its creditors."

TO ADD STEAM ROLLER

PLENTYWOOD, MONT. — Plans for the addition of a large capacity steam roller to the now existing custom grinding and mixing service of Occident Elevator, are announced by James Schmidt, manager. Equipment for adding special rolled barley supplements and liquid molasses will also be installed.

Pillsbury Notes Improved Earnings

MINNEAPOLIS — Pillsbury Co. earnings for the first quarter of fiscal 1961 were better than for the corresponding period a year ago, company president Paul S. Gerot told stockholders at the firm's annual meeting.

He said there is no indication, however, that an intense competitive situation, particularly in the consumer area of the business, is easing.

Mr. Gerot said he looked for some improvement in earnings in fiscal 1961, based on programs and operating plans at work within the company. Earnings last year, it was noted, were second highest in the company's history.

Capital expenditures in fiscal 1961, he said, will be at about the same level as last year, when the company invested $9.4 million in plant and equipment.

Stockholders were told that the company is seeking foreign as well as domestic growth opportunities. Overseas growth will come through increased exports to some markets and through entry into flour milling in others, Mr. Gerot said.

All directors of the company were reelected at the meeting. Among new officers elected was Terrance Hanold, named vice president and treasurer. Mr. Hanold was appointed principal financial officer of the firm in 1959. Arthur H. Rixe was elected controller.

The board of directors announced a quarterly dividend of 35¢ a share on common stock. The common stock dividend, Pillsbury's 134th consecutive quarterly dividend, is payable Dec. 1 to stockholders of record Nov. 3. The company has 2,109,700 common shares outstanding.

Drouth Hurts Ohio, Michigan Dehydrators

ERIE, MICH.—Ohio and Michigan area dehydrators are in the midst of one of the driest fall seasons they have experienced, according to a report from Joe Cousino, secretary of the Alfalfa Processors Assn.

Reports are coming in of plant shutdowns due to poor and thin fourth cutting stands, he says. New seedings that are normally cut at this time are so poor that little will be processed this fall.

Some operators report cutting 75 acres per day to keep half of their plant rolling and add that they are running out of acreage to cut. Most operators report that they now will be cutting only two to three days a week; others are considering shutting down completely as a weak market will not justify the expense in processing 300-500 lb. per acre of alfalfa.

"This will result in the poorest September production in years for this area," says Mr. Cousino. A survey reveals that the majority feel that any amount of rainfall now would not help much.

Western States Face Winter Feed Shortage

DENVER, COLO.—The coming winter will be a rather high-cost feeding period for range cattle and sheep due to a lack of abundant forage on ranges and pastures, the U.S. Department of Agriculture announced here in its Western Range and Livestock Report.

The total amount of forage on ranges and pastures available for fall and winter grazing in the 17 western states is about the same as last year, however, and this is 1% higher than average.

But quantities of hay and other harvested forage will be about 2% below that of 1959.

An increase is expected in roughage consuming animals over last year, causing the balance between livestock numbers and available forage supplies to be the tightest since 1956-57.

PANEL MEMBERS—Panel members at the recent Dealer Business Clinic of Honeggers' & Co. at Forrest, Ill., were, left to right: Glen McDaniel, Marion, Ind.; Virgil Feaster, Inwood, Ind.; Vaughn Reigel, New Paris, Ohio; Erwin C. Wascher, moderator and vice president-operations for Honeggers'; Earl Broquard, Watseka, Ill., and Raymond Ortman, Kokomo, Ind.

Belief in Family Farm Expressed at Clinic

FORREST, ILL.—"We firmly believe in the family farm. We do not believe that big integrated units will be producing all the market eggs in the future."

These observations were made at Honeggers' & Co.'s recent Dealer Business Clinic as part of comments on a project demonstrating that a small farm can become a high-income egg farm.

More than 325 dealers and sales personnel—representing an area from Pennsylvania to Nebraska and from Michigan to Tennessee—were present for the clinic at Forrest, Ill.

The "Golden 40" poultry farm, where the meeting was held, is tenanted by Roland (Bud) Hensley and is unique in operation. Sam Honegger, speaking for the landlords, mentioned, "We firmly believe in the family farm. We do not believe that big integrated units will be producing all the market eggs in the future. Farmers today are finding it important to increase their incomes by a combination of new enterprises, greater volume, more efficiency of operation and better marketing. To demonstrate that a small 40-acre farm can become a high-income egg farm, we started our Golden 40 project in 1958. Although egg markets in 1959 were among the lowest in a great many years, we made a profit. The results of this project speak for themselves."

E. F. Dickey, Honeggers' president, said that the meeting was scheduled to take a look at some of the trends in the feed business. The clinic was built around four panels made up of dealers representing various sections of the country. These dealers were chosen to participate "because of their outstanding performance in some particular phases of their business operations."

"Business Organized for Profit" was a panel covering matters such as maintaining a volume, credit management, controlling expenses, record keeping and team work.

"The Selling Job" panel discussed such topics as the hiring and training of sales personnel, group and organized selling, sales motivations and advertising.

A panel on "Know-How" covered "knowing your product, sources of information, how to acquire it, complete program selling, how much technical information customer expects of dealer, etc." Many questions were asked of this particular panel of five dealers.

"Serving Today and Tomorrow" was the subject of a panel which advised people to "look into the crystal ball to see what might be ahead in the future."

After the heavy program of the day, a chicken barbecue was held in a 34 x 152 ft. poultry house which will soon be housing Honegger layers.

Mr. Dickey, in closing the meeting, re-emphasized the gains that were possible and had been made during the day because of the exchange of ideas and the contributions of the participating dealers. He further expressed gratitude to the participants, both on the panel and those who contributed from the floor.

Poultry Specialist Joins Dr. Salsbury's

CHARLES CITY, IOWA — Robert E. Waggoner, a poultry specialist from Stillwater, Okla., has joined Dr. Salsbury's Laboratories as a member of the education staff and instructor in the firm's poultry short course.

R. E. Waggoner

Mr. Waggoner recently completed his master's degree at Oklahoma State University while employed by the university as a research assistant. As a graduate student, he specialized in study and research on poultry management.

His bachelor of science degree, with a major in poultry science, is from the University of Arkansas at Fayetteville. While attending the latter university, he was employed for a time as supervisor of the institution's poultry farm.

Colorado Feed Firm To Build Feedlot

AKRON, COLO.—The Hall Grain Co. here is going into the cattle feeding business on a large scale to supplement its country elevator and feed mixing business.

Feeding pens are being built to feed 1,000 head of cattle. Feed will be mixed in the company's own plant. The new firm will be known as the Colorado Beef Co. Joseph L. Hall owns the plant.

L. H. BEAR DIES

OMAHA — Funeral services were held here Sept. 14 for Lesem H. (Cub) Bear, 68, treasurer of the Westcentral Cooperative Grain Co.

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CITRUS MEAL

(Continued from page 1)

ange crop, but calculated that fruit production in the state this year still may be as high as last year because it had been forecast before the winds hit that the current crop would exceed last year's by 25%. These observations indicate that the hurricane of last week reduced the citrus fruit crop prospect to the 1959 level.

It was expressed by some persons that it was too early to tell exactly how extensive damage to fruit crops was.

A Sept. 1 report said there were only 28,398 tons of citrus pulp in storage in Florida. If movements out of storage continue at current rates, observers said, the stock will be depleted within 30 days. This week's citrus pulp prices were at a firm $47.50-50, f.o.b. Florida processing plants, and offerings were very tight.

Hurricane Donna was reported to have caused very little damage to Florida feed mills. Loss in this connection was confined mostly to broken windows and water damage to ingredients.

Damage to poultry-growing facilities was reported to be widely scattered and of little consequence.

Florida's dairy industry suffered from the storm's blow. In the Tampa area alone, something like 15,000 gal. of milk a day have been dumped because electric power failures have made refrigeration almost impossible.

It may be another 10 days before some Florida pastures have dried sufficiently to be of much feed value.

POTENTIAL

(Continued from page 1)

ing age) on farms Sept. 1 were off 7% from year ago figures.

The number of layers totaled 278,878,000, compared with 289,345,000 on Sept. 1 last year. The north Atlantic area suffered the largest decline, 12%, followed by 7% in the west north central, 4% in the east north central and 1% in the south central regions. The western with 6% and the south Atlantic with 2% were the only regions notching gains.

Pullet numbers not of laying age were below last year in all regions with total estimate at 110,108,000.

Potential layers on farms Sept. 1 totaled 388,986,000. This is the smallest Sept. 1 number of potential layers on farms since estimates began in 1937.

Despite a sizeable increase in rate of lay, farm flock production was down in August from the previous year. Farm flocks laid 4,765 million eggs during August, compared with 4,787 million in August, 1959. Increases of 5% in the west, 4% in the south Atlantic and 1% in the south central states were offset by decreases of 9% in the north Atlantic and 1% in the west north central regions.

The rate of lay on Sept. 1 hit a record high for the date. The rate was 54 eggs per 100 layers, comparing with 52.5 eggs a year ago, a 3% increase.

Peavey Elects New Officers, Directors

MINNEAPOLIS — Changes in officers of F. H. Peavey & Co. and its divisions were announced by Totton P. Heffelfinger, president, following the annual directors meeting in Minneapolis.

Gerald A. D. Smith, former secretary, controller and assistant treasurer of the company, was elected vice president and controller.

Gilbert G. Giebink, former treasurer and assistant secretary of Peavey, was elected vice president and treasurer.

John A. Bowen, former manager of the company's insurance department, was elected vice president, insurance.

Gordon T. Leech, former secretary, assistant treasurer and assistant controller of Russell-Miller Milling Co., was elected secretary and assistant controller of Peavey.

J. Richard Adams was elected assistant secretary of the Peavey Feed Mills division in addition to his duties as advertising manager.

Lester S. Swanson, former sales manager of the durum department, King Midas Flour Mills, was elected vice president, durum sales of the milling division.

Bernard P. Mahowald and Alan D. Beggs, both assistants to the general manager of the Occident Elevator division, were elected assistant secretaries of the division.

Assigned a new post with the milling division was James W. Pehle, named vice president, production coordinator.

All other officers of the company

(Turn to PEAVEY, page 89)

Joe N. Pless

DISTRIBUTOR — The Joe N. Pless Co., Memphis, formed in 1959 by Mr. Pless as the successor firm to Pless & Sheahan, has been named by the Peter Hand Foundation as a distributor for its complete line of feed additives, including vitamins, antibiotics and custom and standard mixes (Feedstuffs, Aug. 27).

Hens and Pullets of Laying Age, Pullets Not of Laying Age, Potential Layers on Farms, Sept. 1

Year	North Atlantic	E. North Central	W. North Central	South Atlantic	South Central	Western	United States
Hens and Pullets of Laying Age on Farms (thousands)							
1947-58 (average)	52,601	54,456	73,134	29,025	45,568	33,274	288,059
1959	50,232	53,372	70,680	34,285	42,092	38,684	289,345
1960	44,276	51,349	65,581	35,134	41,534	41,004	278,878
Pullets Not of Laying Age on Farms (thousands)							
1949-58 (average)	26,436	36,894	43,512	15,345	24,141	14,026	180,353
1959	18,975	25,982	41,927	15,867	15,326	9,811	127,888
1960	15,534	22,291	37,975	12,098	12,822	9,388	110,108
Potential Layers on Farms* (thousands)							
1949-58 (average)	79,036	91,350	136,646	44,370	69,708	47,300	468,412
1959	69,207	79,354	112,607	50,152	57,418	48,495	417,233
1960	59,810	73,640	103,556	47,232	54,356	50,392	388,986

*Hens and pullets of laying age plus pullets not of laying age.

NUTRENA MEETING—The keynote speech by Nutrena Feeds president J. C. North, opening the firm's sales convention aboard the S.S. North American, is absorbed by (sitting, left to right) Lee Carder, Charles City, Iowa; Bob Halvorson, Rochester, Minn.; Jim Hawks, Monmouth, Ill.; Russ Brooks, Harlan, Iowa, and (standing), Don Thill, Sioux Falls, S.D.; Al Nordin, Marshall, Minn. and Ron Sirpless, Watertown, S.D.

NUTRENA

(Continued from page 1)

of "package" systems was made before some 400 Nutrena salesmen, administrative and production personnel and wives attending the firm's 40th anniversary sales convention, which ended here Sept. 9, and a three-day dealer training meeting, concluded Sept. 12—both aboard the S.S. North American, Great Lakes charter vessel. Nutrena officials said the shipboard meetings were arranged because of freedom from normal business distractions and to create a pleasant atmosphere.

Livestock and poultry farmers, Mr. North said, are turning with increasing frequency to feeds and production systems that assure maximum yields at the lowest possible cost. "Every year," he said, "we find more farmers turning into 'agri-businessmen,' and it is only by anticipating and meeting their needs that an agricultural service firm such as ours can continue to grow and expand." He predicted more specialization in farming and cited past Nutrena developments—including the Pigloo and Calfloo systems—as examples of the new direction. He said the company plans release of several new complete systems in 1960-61.

Mr. North listed four industry responsibilities in meeting current changes: Effective sales training that keeps pace with the change; top lines of new and improved products monitored by strict quality control; sufficient capital to provide inventories and credit; a good working plan to provide recognition of the personnel who make the change more effective and smooth.

Dealer Meeting

The 350 persons attending the dealer training meet heard Nutrena executive vice president E. C. Fuller say his company is firmly tied to dealers as the dominant force in distribution.

"There are those in feed manufacturing who confidently predict dealers will gradually pass out of the picture," he said. "They are the same concerns who shrug off the family farm and are concentrating on large integrated operations and contract production. Many have already quit the feed business or are in trouble because of poor profits. We will not make the same mistakes."

Mr. Fuller said most dealers dropping out in the last five years have failed to make necessary adjustments to the new "agri-business" economy. "They have resisted change and have tried to survive without the benefits of systems-and-business engineering," he said. "More will go out of business in the next five years and for the same reasons, with customers shifting to dealers equipped to sell and serve efficiently."

Mr. Fuller said Nutrena foresees an agricultural production and marketing revolution in the 1960's "fast enough to take your breath away—fast enough to take your business away if you do nothing but 'wait and see'."

He listed six planks that will govern Nutrena's approach to animal agriculture in coming years:

- "Concentration on the average feeder who researchers agree will represent the feed industry's biggest market in the '60's;
- "Reliance on the family farmer as the man best qualified to become a volume producer of livestock and poultry;
- "An even greater effort in research and development to provide complete production systems and improved feeds;
- "Correlation of farm production with marketing requirements;
- "Indoctrination of dealers and customers in more sound business management techniques;
- "Production of improved products at less cost, coupled with accelerated service programs."

Both meetings also included discussions of upcoming sales and advertising programs, new developments in beef, dairy, swine, turkey and poultry programs, Pigloo and Calfloo systems, credit and quality control and a series of regional workshops.

At the sales convention, Mr. North traced Nutrena's growth from its 10th anniversary meeting in 1930. "That session," he said, "was attended by 30 persons representing 100 employees and one mill serving parts of four states. Today we have 1,000 employees, 15 mills serving 24 states and have increased our tonnage 20-fold."

A highlight of the meeting came at special ceremonies when Mr. North revealed names of Nutrena's top 15 salesmen selected for membership in the "President's Club." The group will serve as an advisory staff, working with company sales executives in developing plans and programs for the coming year, Mr. North said.

Those names included: Omer J. Baumhardt, territory manager, Waco, Texas; J. F. (Jude) Claunch, turkey sales supervisor, Oklahoma City, Okla.; Carl E. Brammer, territory manager, Vinita, Okla.; Jim Dunlay, turkey sales supervisor, Waterloo, Iowa; W. H. (Bill) Gann, territory manager, Holton, Kansas; C. V. Haight, territory manager, Marshalltown, Iowa; W. Glen Heflin, territory manager, Grandbury, Texas; E. L. Hotek, sales development, Buffalo, Minn.; Francis Kalkbrenner, turkey sales supervisor, Clarion, Iowa; H. Dean Lockwood, territory manager, Mitchell, S.D.; C. E. McIlvain, territory manager, Carroll, Iowa; Ed Purcell, territory manager, Clinton, N.C.; Francis Riley, territory manager, Talladega, Ala.; Dean B. Stucker, territory manager, DeKalb, Ill.; Jack Theobald, territory manager, Oxford, Miss.

4 GRAMS!

that's the amount of zinc bacitracin (Baciferm) per ton of feed that increases broiler profits $6 to $22 per 1000 birds.

That's all. 4 grams. And broiler profits can increase $6.55 per 1000 birds to $22.58 per 1000 birds. That's what Baciferm zinc bacitracin antibiotic supplements do for you.

The proof? We have just completed calculations on the results of *six* recent tests conducted in different parts of the country involving over 14,000 birds! The summary below highlights the pertinent facts and figures. See for yourself why Baciferm makes such good business sense (and dollars) in *your* broiler feeds. These results confirm the data from scores of tests run during the past several years.

	NUMBER OF BIRDS	EXTRA PROFIT PER THOUSAND BIRDS OVER CONTROL (4 GRAMS ZINC BACITRACIN PER TON)
CSC TEST #23	524	$15.34
COLLEGE TEST #58	964	$13.95
COLLEGE TEST #60	300	$ 9.50
FEED MANUFACTURER'S TEST #78	12,000	$ 6.55
COLLEGE TEST #82	600	$21.85
COLLEGE TEST #83	150	$22.58

BASIS: market price of broilers 16¢ per lb.; feed cost 4½¢ per lb.; zinc bacitracin 7¢ per gram.

Doesn't it look like Baciferm is the buy for you? Baciferm's the buy for more and more feed manufacturers for both low and high level use. It's the economical antibiotic supplement for poultry and swine feeds. It contains the selectively-active antibiotic *zinc* bacitracin made exclusively by CSC under Patent No. 2,809,892. Baciferm's selective action kills dangerous bacteria fast but lets beneficial bacteria go right on producing vitamins and other valuable growth factors. College tests show that Baciferm gives full value in stimulating growth and reducing mortality. And – *zinc* bacitracin has the antibiotic stability manufacturers require.

One other thing: for stress and disease Baciferm can be added to each ton of *your* feed at $2 to $4 less than the cost of the tetracyclines.

ANIMAL NUTRITION DEPARTMENT

COMMERCIAL SOLVENTS CORPORATION, 260 MADISON AVENUE, NEW YORK 16, N. Y.

CSC

IN MEXICO: Comsolmex, S.A., Mexico 7, D.F.

CANADIAN SALES REPRESENTATIVE: Norman Stark

New Research Findings to Be Outlined At Cornell Conference on Nov. 3-4

BUFFALO, N.Y.—Some of the latest research developments and advances in the nutrition field will be discussed at the Cornell Nutrition Conference, Nov. 3-4, at the Hotel Statler.

The conference, one of the largest feed industry gatherings each year, is sponsored by Cornell University, Ithaca, N.Y., in cooperation with the American Feed Manufacturers Assn.

Among the topics to be discussed will be protein requirements of laying hens, energy and amino acids in swine nutrition, soybean products, certain aspects of mineral nutrition, fats in poultry and ruminant rations, urea and biuret for ruminants and the frequency of feeding.

Most of the speakers on the program will be from the host school. Guest speakers will include Dr. D. E. Becker of the University of Illinois; Dr. W. W. Cravens, McMillen Feed Mills, representing the AFMA; Dr. Paul Griminger, Rutgers University; Dr. N. L. Jacobson, Iowa State University, and Dr. L. C. Norris, University of California. Dr. Norris had been with Cornell for 39 years prior to retirement last year.

Much of the morning session Nov. 3 will be devoted to general discussion of past changes and a look to future progress. Dr. C. E. Palm will open the conference Nov. 3 with a discussion of "Research and Cooperation Essential to Our Future Progress." Dr. Cravens will talk on "Why Research?" and Dr. L. C. Cunningham will present information on "Changes in the Feed-Livestock Situation."

Also on the morning program are Dr. M. L. Scott talking on "Protein Requirements of Laying Hens;" Dr. J. M. Kingsbury discussing "Poisonous Plants" and Dr. Jacobson explaining "Functional Development of the Digestive System of the Calf."

Dr. W. K. Kennedy will open the afternoon session with a talk on "Nitrate Poisoning," with Dr. Becker following with "Energy and Amino Acids in Swine Nutrition." Dr. J. K. Loosli will cover research on "Soybean Products for Lactating Cows."

Dr. R. H. Barnes will report on "Experimental Studies With Soybeans." Dr. Norris will then discuss "Studies on the Availability of Trace Minerals in Soya Diets," followed by Dr. M. C. Nesheim outlining "Studies on the Effect of Trypsin on the Metabolizable Energy of Raw Soybean Oil Meal for the Chick."

Dr. S. E. Smith will open the second day with a discussion on "Availability of Phosphorus to Swine and Cattle." Dr. Griminger will follow, talking on "Calcium and Phosphorus for the Laying Hen." Two discussions of fatty acids will follow. D. T. Hopkins will discuss "Unsaturated Fatty Acids in Poultry Nutrition," followed by R. Young reporting on "Factors Affecting Utilization of Fats and Fatty Acids by the Chicken."

Dr. W. G. Pond will tell of work on "Effects of Oral or Parenteral Iron Administration to Suckling Pigs and to Sows." Dr. R. G. Warner will discuss "The Place for Added Fat in Ruminant Rations," and then Dr. Loosli will discuss "Urea and Biuret for Ruminants."

"Studies on Frequency of Feeding" by Dr. J. T. Reid will be the final formal paper on the program, with a question and answer period, headed by Dr. J. H. Bruckner, closing out the program.

Registration will be held in the evening Nov. 2 and the morning of Nov. 3. Presiding at the three sessions will be Dr. H. H. Williams, Dr. K. L. Turk and Dr. Douglas E. Hogue.

An AFMA social hour will be held Thursday evening, Nov. 3.

Packaging Seminar Held in Minneapolis

MINNEAPOLIS — West Virginia Pulp & Paper Co. held a packaging seminar here for representatives of a number of the nation's leading feed companies.

In the meeting held at the Minneapolis Athletic Club, V. S. (Mike) Luke, manager of West Virginia's Multiwall Bag Division, told the representatives that his firm's six years of experience in development, improvement and conversion of extensible paper has provided the company with the "know-how" to save the industry up to $1 million per year.

Although "the key to the program is the Clupak extensible paper that is used for the company's Wonderwall bags," Mr. Luke pointed out that this is only one factor in a program that begins with the manufacture of paper and continues on to the completion of the finished product. "Our research, technical and engineering people, in developing Clupak extensible paper, have gained invaluable know-how," Mr. Luke commented.

Among the companies represented at the seminar were Archer-Daniels-Midland Co., Doughboy Industries, Farmers Union GTA, General Mills, Inc., International Milling Co., Land O' Lakes Creameries, Inc., Minnesota Farm Bureau Service, Northwest Co-Op Mills, Nutrena Mills, Osborne-McMillan Elevator Co., The Pillsbury Co., and Rath Packing Co.

CATTLE SELF-FEEDER—Some visitors to the recent University of Illinois Cattle Feeders Day listen as agricultural engineer Donald Daum (right) explains the intricate parts of a new self-feeder that automatically feeds eight times a day. The Illinois men are, from left: J. W. Cory, Earlville; Russell Philbrick, DeKalb, and Jerry Edwards, Malta. More than 1,200 farmers, feed dealers and cattlemen attended the annual event.

Ontario Poultry Group Appoints M. H. McPhail

TORONTO, ONTARIO — Ontario Poultry Council has appointed Murray H. McPhail as secretary-manager, according to Ralph Foster, president. He will head this all-industry organization and supervise the central office opened at the temporary location of 69 Yonge Street here.

Office staff, facilities and administrative services as announced by Mr. Foster are being made available to the council through arrangement with the Ontario Retail Feed Dealers Assn., which organization Mr. McPhail continues to serve in the capacity of executive vice president.

"This move on the part of the Ontario Poultry Council is made in an attempt to keep pace with the rapid growth and development of the poultry industry of this province and in consideration of a recognized need for the extension of services being offered to members of each segment thereof," Mr. Foster commented.

Prior to assuming the position of secretary-manager, Mr. McPhail was a director of the original Ontario Poultry Industry Committee for a number of years and held office as the first president of the Ontario Poultry Council.

Hog Cholera Outbreak Reported in Florida

GAINESVILLE, FLA. — A serious outbreak of hog cholera has developed in Florida, according to Dr. W. R. Pritchard, head of the veterinary science department at the University of Florida.

Dr. Pritchard says that reports from veterinarians, county agents and farmers indicate that hundreds of swine herds are stricken and, in some cases, hog cholera is present on every single farm in a community.

He adds that the full extent of the damage is still unknown, but that the disease costs hog farmers millions of dollars each year.

Arkansas Formula Feed Conference To Open Sept. 22

FAYETTEVILLE, ARK. — Tenth annual Formula Feed Conference will be held on the campus of the University of Arkansas here Sept. 22-23. Sessions will be held in the Animal Science Building. Registration begins at 9 a.m. Henry Niemeyer, president, Arkansas Feed Manufacturers Assn., will preside at the opening session.

Dr. David W. Mullins, president of the University of Arkansas, will speak at the opening session at 10:30 a.m.

Lloyd Larson, executive vice president of the Midwest Feed Manufacturers Assn., Kansas City, will report for the Midwest. Henry DeSalvo, with the Arkansas State Plant Board, will report for that organization.

Dr. Warren Gifford, head of the department of animal industry and veterinary science at the University of Arkansas, will be chairman of the afternoon session. Dr. James Dinning, head of the department of biochemistry, University of Arkansas Medical School, Little Rock, will speak on the role of the biochemist in the formula feed industry.

The next four speakers, who are with the Arkansas Agricultural Experiment Station, are: Dr. O. T. Stallcup who will cover recent developments in feeding dairy cows, Dr. P. R. Noland discussing calcium requirements of farm animals, Dr. O. H. Horton revealing recent developments in feeding dairy calves and Dr. E. H. Peterson who will present new ways of controlling chronic respiratory disease in poultry.

A chicken barbecue caps the first day's activities.

Sept. 23 sessions begin at 9:30 a.m. Collier Wenderoth, with O. K. Feed Mills, Inc., Fort Smith, will be chairman.

B. N. McPherson, the University of Arkansas Experiment Station, will tell about the feeding value of grit for poultry; Dr. T. S. Nelson, International Minerals & Chemical Corp., Chicago, will compare values of different phosphorus sources; Roy Pruitt, director, St. Louis district, Food and Drug Administration, will

NEW BUILDING—Grandone, Inc., Norwood, Mass., a 20-year veteran firm in agricultural chemical feed business, has just moved into this new building in the Westwood-Norwood area in Massachusetts, adjacent to U.S. Highway 1 and near Highway 128. The Grandone Corp., a newly formed realty corporation, constructed the new building. In addition to Grandone, Inc., the two split level building houses Atlantic Engraving Mfg., Inc., and Warren Wire Co. Grandone Corp. holds 50,000 sq. ft. of land for future building and development. The firm is distributor for American Cyanamid Co., E. I. du Pont de Nemours & Co., Inc., International Minerals & Chemical Corp., National Alfalfa Dehydrating & Milling Co. and Whitmoyer Laboratories, Inc.

discuss problems concerning the feed industry and the FDA; W. M. McBride will tell the ingredients of a complete mixed feed for beef cattle, and Dr. K. W. Scott will discuss quality control of feed ingredients. Mr. McBride and Dr. Scott are with the University of Arkansas Experiment Station.

Fred K. Darragh, Darragh Co., Little Rock, president of the Midwest Feed Manufacturers Assn., will be chairman for the final afternoon session. Dr. Laurant Michaud, Merck & Co., Rahway, N.J., will speak on amino acid interrelationships for swine and poultry. Dr. Maurice L. Ray, University of Arkansas, will speak on creep feeding for beef calves maintained on good Arkansas pasture and Lionel Barton, University of Arkansas, will speak on recent advances in nutrition of laying and breeding hens.

Miller & Bushong Hires Research Head

ROHRERSTOWN, PA. — Miller & Bushong, Inc., feed manufacturing firm here, has announced that Dr. Woodie Williams, Jr., will head the firm's expanding department of research and development of poultry and livestock feeds.

Dr. W. Williams, Jr.

Dr. Williams came here from College Station, Texas. He did his graduate work at Texas A&M College and received his doctor's degree there in August, according to Hendrick Wentink, sales manager for Miller & Bushong, Inc.

GIVE YOUR FEEDS A LIFT!

Blackstrap molasses is your most economical source of carbohydrates *plus*. You should be using *more* molasses in more formulas. The very best blackstrap comes from . . .

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RED A FEEDS
LOUISVILLE, KENTUCKY
SERVING THE GREAT SOUTHEAST

PAMCO is the "VITAL LINK" between feeder and feed merchandiser

Be a progressive feed merchandiser. Let PAMCO be the "vital link" between your grain bank and your hog, cattle, poultry and turkey feeders. ONLY PAMCO unloads AND loads your grain and feed while shrinking your overhead and taking the backache out of customer service.

PAMCO **loads** your feeder's grain right on the farm.

PAMCO DELIVERS TO THE FEED MERCHANDISER

PAMCO **unloads** at the grain bank. Fresh feed is mixed.

Whenever the bulk feeder needs feed . . .

PAMCO RETURNS to the FARM CUSTOMER

PAMCO **unloads** into your customer's on-the-farm bulk bins and feeders.

Manufacturers of most complete line of bulk delivery trucks and equipment: Conversion, Combination, and complete Bulk Auger Units — Pneumatic Bulk Units — Dump Bins — Hopper Car Unloaders — Steel Truck Bodies — Painting and Servicing Facilities.

ONLY PAMCO Unloads AND Loads

PAMCO is the "vital link" that ties the grain bank customer closer to you . . . because ONLY PAMCO unloads AND loads. Customers will bank on PAMCO's performance to load grain and deliver feed when he wants it, the way he wants it, where he wants it. He doesn't need to tie-up needed capital in grinders and mills, wait for customer feed grinders or hire scarce labor. No lifting sacks or shoveling. Make PAMCO the "vital link" in your grain bank set-up . . . it sparks more new business and year round profits.

PAMCO

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INSTALLATION AND DISTRIBUTING POINTS FOR BUYING OR SERVICE:
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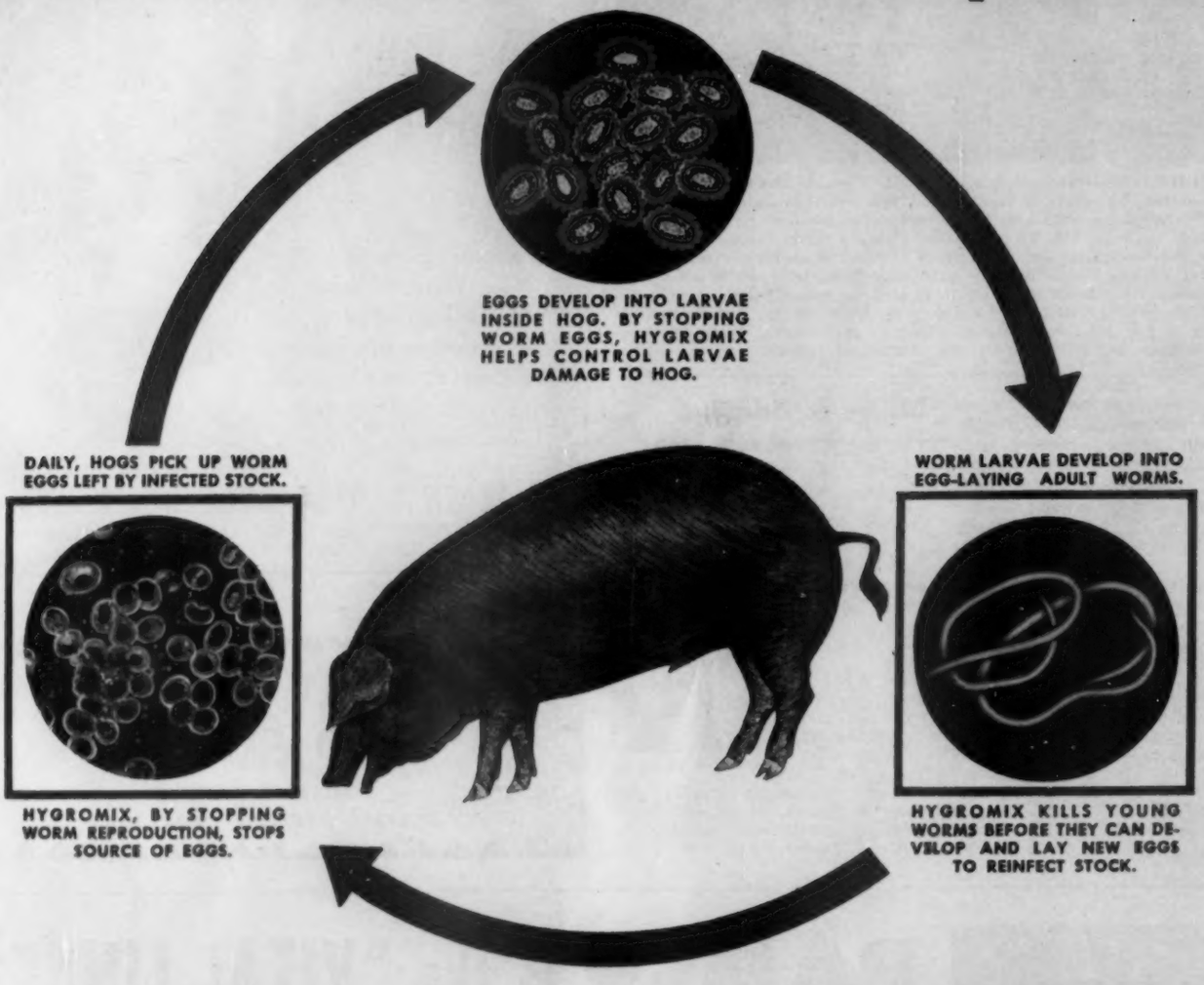
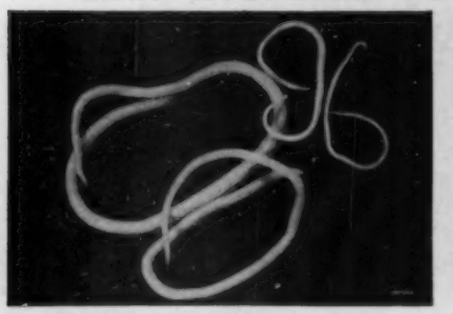
Swine worms: A continuous problem


EGGS DEVELOP INTO LARVAE INSIDE HOG. BY STOPPING WORM EGGS, HYGROMIX HELPS CONTROL LARVAE DAMAGE TO HOG.
DAILY, HOGS PICK UP WORM EGGS LEFT BY INFECTED STOCK.
WORM LARVAE DEVELOP INTO EGG-LAYING ADULT WORMS.
HYGROMIX, BY STOPPING WORM REPRODUCTION, STOPS SOURCE OF EGGS.
HYGROMIX KILLS YOUNG WORMS BEFORE THEY CAN DEVELOP AND LAY NEW EGGS TO REINFECT STOCK.

ONLY HYGROMIX CONTROLS THESE THREE WORM LIFE CYCLES:



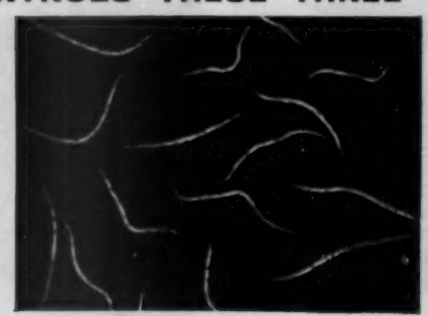
THE LARGE ROUNDWORM
(Ascaris) *life cycle*

1. Female worm lays up to 1,400,000 eggs a day. Eggs develop embryos in about 14 days.

2. The larvae hatch in the small intestine, penetrate intestinal wall, migrate in the blood stream through liver, heart and lungs. After reaching lungs in about 10 days, larvae are coughed up and swallowed by the pig.

3. Larvae return to small intestine where they develop to egg-laying maturity in 2 to 2½ months.

Damage: Retards growth in young animals and they become unthrifty. As larvae migrate through lungs, pigs have difficulty breathing (cough constantly), often contract pneumonia and die. Lungs hemorrhage, liver damaged. Disturbed digestion. Thumps. Ulcers. Reduces effective nutrient-absorption area of intestine. Adult worms may block bile duct.



THE NODULAR WORM
(Oesophagostomum) *life cycle*

1. Adult female lays 5 to 10,000 eggs daily, which are expelled in the manure. Eggs often hatch in 24 to 48 hours.

2. Larvae hatch from eggs on the ground and become infective in 3 to 6 days. Pigs are infected when they pick up larvae. Larvae pass through stomach, small intestine into large intestine. Larvae discard protective sheath and penetrate the mucous membranes—which causes intense inflammation within 48 hours. Small nodules develop at points of penetration.

3. Nodules rupture and worms become free to grow and feed in the large intestine, reaching egg-laying maturity about 2 months after the larvae were taken into the body.

Damage: The nodules formed where worms penetrate membranes are ideal locations for infection. Nodules may interfere with food absorption. The adult worms produce intestinal inflammation, weakness, anemia, emaciation, diarrhea, general unthriftiness. Pigs which live are usually stunted.

THE WHIPWORM
(Trichuris) *life cycle*

1. Female lays up to 5,000 eggs per day, which are passed in the manure. Eggs develop to the infective stage in a few weeks to several months, depending upon environment.

2. Swine are infected directly by swallowing eggs. Eggs hatch and larvae penetrate and interlace their bodies in the intestinal walls.

3. Worms settle in the large intestine and grow to maturity in 4 to 5 weeks.

Damage: Infections can cause unthriftiness, weakness, and emaciation; they may even kill a young pig. The attachment of the worms to the wall of the intestine produces an inflammation of the delicate lining, causing bleeding and diarrhea. Damaged intestinal walls are ideal locations for invasion by secondary infections of disease bacteria.

Hygromix: Continuous protection from the problem...

Hygromix in the feed is the only worm control method that... kills three kinds of worms...
prevents worms from laying new eggs...
kills worms day after day...
does not upset feeding or require extra labor

The chart on the left shows the life cycle of swine worms... a continuous process of reinfection that, unseen, eats away at hog-raising profits by slowing gains, lowering feed efficiency and general herd health.

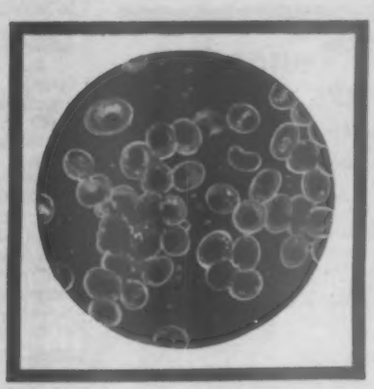
If you were to butcher a "normal, healthy" hog and trace these damaging cycles with a high-powered microscope, you would find all of the stages shown on the left *going on at once*. You would find worm eggs, larvae, baby worms, and adult worms laying new eggs to start the cycle spinning around inside the hog again and again.

Because the cycle... and the loss... continue day after day, there was no way to fight the problem until Hygromix was developed. Purge-type wormers never had any real effect upon the process. By the time the adult worms were flushed out, new eggs had been layed, and most of the damage had already been done.

Hygromix in the feed is the only way to stop the damaging life cycles *before they start*. Hour after hour, Hygromix kills the large roundworm, nodular worm, and whipworm from previous cycles *before they can reproduce*. This same continuous killing action also knocks off baby worms from later cycles *before they can grow to egg-laying maturity*. The fact that Hygromix kills most of the worms when they are small explains why farmers find few adult worms in the droppings of Hygromix-fed hogs.

HERE'S WHY HYGROMIX IS THE ONLY WAY TO BREAK THE LIFE CYCLES OF THE LARGE ROUNDWORM, NODULAR WORM AND WHIPWORM:

Hygromix kills worms as they enter the intestinal tract. Day after day, the hogs protect themselves by killing worms *before* they can do damage... *before* they can lay new eggs.



Hygromix stops swine worm reproduction by killing worms before they can lay new infective eggs. Hygromix is the only worm control method that strangles the source of swine worm damage.

Hygromix kills new worms as they hatch... before they can grow to egg-laying maturity. Hygromix kills adult worms from previous cycles before they can reproduce.

HYGROMIX®
(S. hygroscopicus fermentation products, Lilly*)*
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Makers of **STILBOSOL®** (diethylstilbestrol premix, Lilly)
Streptomycin Sulfate • Vitamin B12
Micro-Pen® (special coated procaine penicillin G, Lilly)

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EGGSHELL BRAND
A HOPPER IN EVERY PEN!
AMERICA NEEDS
THIS ONES IN THE BAG!
It's the overwhelming favorite—the people's choice in the East, where EGGSHELL BRAND Oyster Shell year after year takes the lead over all other shells and substitute candidates.
And EGGSHELL BRAND keeps its promises . . . to remain pure, soft, clean and dust-free . . . to build the finest egg shells possible in this glorious land of ours.
EGGSHELL BRAND OYSTER SHELL
a product of
OYSTER SHELL CORPORATION
BALTIMORE, MARYLAND

EGG BOOSTER—Jean Yandry, 20, farm girl from Ft. Atkinson, Wis., gets ready to make one of her favorite egg recipes. She was chosen Miss EGGtober for 1960 by Chas. Pfizer & Co., Inc., to urge the nation's consumers to eat more "Eggs—A Wise and Thrifty Buy," during the fall months.

Gains in Impact of 'EGGtober' Cited

NEW YORK—The per capita consumption of eggs in the U.S. has continued to drop. From a post-war high of 407 eggs per person, per capita consumption is expected to drop to around 324 eggs this year.

Concern over the decline has been widespread, and many organizations and industries have worked through various programs to promote greater consumption of eggs. One of these promotions is EGGtober, which is moving into its third year.

This promotion—named by the deliberate misspelling of October—continues as an idea with a two-fold objective: (1) Stimulation of egg sales by showing consumers the value and economy of eggs in the diet, and (2) stressing to egg producers the importance of fortified commercial feeds in increasing production and lowering costs.

EGGtober has been gaining in its impact, observers point out, and the sponsors of the program look for it to have still wider effects. A primary purpose has been to remind the consumer that "EGGtober Is the Time to Eat More Eggs." But another function, it is noted, is use by feed manufacturers and dealers of various types of EGGtober programs to show poultrymen the benefits of scientific feeds.

The initial idea and planning for the EGGtober campaign, started in 1958, came from the agricultural division of Chas. Pfizer & Co., Inc. However, the effort has not been limited to this firm's activities alone. For example, the Poultry & Egg National Board has cooperated since the start of the promotion and now uses EGGtober as a regular fall promotion.

Consumer Field

Citing the impact of the promotion in the consumer field, a Pfizer spokesman noted that in 1959, an EGGtober program was offered to leading food stores and chains, and when the results were tallied, it was found that EGGtober kits had been ordered by nearly 7,000 stores from 12 major chains, 15 retailer-owned cooperative wholesalers and nine voluntary group wholesalers.

Pfizer officials, quoting letters from food store operators, noted that a North Carolina store increased egg sales by some 100% during the week ended Oct. 24; a California firm boosted sales 25% during the promotion, and an Iowa chain reported a 40% gain in egg sales.

Along with the activity at the consumer level, there has been the promotion in the poultry industry. During 1958, for example, the theme was the "13th month of egg production"—the extra month of eggs poultrymen could receive when they used properly balanced feeds. Since the inception of the campaign, report Pfizer officials, some 150 feed companies and more than 4,000 dealers have used the promotion, with the service programs varying locally among the different firms and dealers.

One of the special features of the promotion is the naming of a national Miss EGGtober, who must be of farm background and who must have had 4-H Club experience. Jean Yandry of Wisconsin currently has the Miss EGGtober title, and this year is reminding housewives that "Eggs Are a Wise and Thrifty Buy."

Continued growth and acceptance of the promotion are forecast for this year's efforts. For example, PENB is continuing to carry on EGGtober projects, including its annual EGGtober recipe. In 1959, Rural Gravure magazine, with a combined circulation of more than 516,000, devoted a complete issue to EGGtober, and another issue of the magazine this year will feature EGGtober. Appearances by Miss Yandry at trade shows and fairs in the Midwest also will spotlight activities. A major part of the program will be newspaper mats, TV slides, special recipes, informational kits to radio stations, food editors and others, and a wide selection of material published by PENB.

"While it is impossible to prove through statistics that per capita egg consumption was increased as a re-

"HAPPY EGG" APRON—Beth Benson, daughter of Ezra Taft Benson, secretary of agriculture, received a "Happy Egg" apron from Miss EGGtober in 1959, Adele Leonard, Livingston, N.J., as a souvenir of an all-egg luncheon especially prepared for the Benson family in the secretary's private dining room. Specially designed EGGtober plastic aprons were printed and mailed to home demonstration agents, newspaper food editors and feed store managers.

NEW BAZOOKA BATTERY POWERED
TRUCK UNLOADER

Undertrack and underground unloaders

Bin Sweep Unloader—saves 12 man hours on every 24' bin!

Self-Powered Drag Auger

Self-Powered Swinging Hopper

BAZOOKA AUTOMATION
SAVES TIME, LABOR, MONEY HANDLING GRAIN AND FEED

Here's the latest time-and-money saving idea from BAZOOKA, the leader in Grain and Feed Conveying Equipment! New BAZOOKA Truck Unloading Auger converts any dump truck into an unloading wagon . . . operates from your truck battery . . . has push-button control at the spout. Flexible elbow and telescoping spout gives long reach in any direction . . . can be mounted on your own truck in minutes!

Look to BAZOOKA for the best and latest in labor-saving conveying equipment for every feed and grain moving job . . . 4" and 6" portable augers . . . 6", 8" and 10" carrier mounted BAZOOKAS . . . fixed conveyors and distributing augers from 4" to 10" . . . Dairy Barn, Feedlot and Hog Feeding systems.

Typical BAZOOKA Automatic Feeding System for Dairy Barns adaptable for hog and poultry feeders. Matched units, extensions and easy-to-attach inlets, outlets and connections save money, simplify installation.

WRITE for FREE new BAZOOKA Booklet — 76 illustrations show you many exclusive BAZOOKA features!

WYATT MANUFACTURING CO. 142 N. 5TH STREET SALINA, KANS.

sult of EGGtober, certainly the comments from consumer outlets bear out the fact that more eggs were sold," a Pfizer spokesman commented. "And from feed dealers and feed companies, comments were equally encouraging.

"The program continues to strive for accomplishment of the two goals —boost the use of formulated poultry feeds and increase the sale of eggs."

In addition to the industry activity, it was pointed out, the U.S. Department of Agriculture has recognized the value of EGGtober through its attempt to create greater interest in and demand for eggs and egg products. Ezra Taft Benson, secretary of agriculture, has supported and encouraged the program.

Utah Cattle Feedlot Will Use Complete Concentrate Ration

OGDEN, UTAH — A Utah meat packer who operates a 3,500-head capacity feedlot has embarked on a new feeding program designed to produce better beef, according to an article appearing in a recent issue of the Western Meat Industry magazine.

The firm, William C. Parke & Sons, is switching over to a 100% concentrate, straight grain ration. They have been testing the ration for six months.

Based on their own experiments, the Parkes feel the all-concentrate ration gives these advantages: 1) Practically all carcasses grade Choice, and carcass yield is increased; 2) cost of gain is lowered; 3) time on feed is reduced, and 4) feedlot labor force can be cut by about 75%.

The new ration, intended to cut feed lot costs and increase efficiency, includes rolled barley, cottonseed supplement mixed with vitamins, minerals and additives.

Conversion rate with the new ration has been about 7.05 lb. of feed per pound of gain. This compares with 8.01 lb. of feed using the former 72% concentrate ration. Cost of gain is now 18.42¢ per pound, compared with 20.21¢ previously, according to the article.

"We used to feed about 150 days," reports Boyde Parke, secretary-treasurer of the firm. "On straight grain, we have cut this down to between 110 and 120 days. The turnover of our inventory is greater, and profits are increased."

Early indications point to a higher carcass yield, too. Yields on the full-concentrate ration are expected to average over 61%.

When the conversion to complete feeding of all grain is made, the company plans to handle its entire year-round feeding operation with two employees. They presently have eight. "We'll go to the concentrate feed after our hay is used up," said Mr. Parke. "Then, since there'll be no hay to pitch, two men can handle the feeding chores easily."

"By eliminating hay, we eliminate the possibility of bloat. But we could run into some foundering problems if we aren't careful."

The cattle are switched to the all-grain ration slowly. They are started on about 4 lb. of rolled barley and 1½ lb. of cottonseed supplement a day. This is increased 1 lb. a day until they are on full feed within about three weeks.

Stilbestrol is also used, and gains are about 15% greater, according to Mr. Parke. And since barley is lacking in vitamin A, this is added along with vitamin D and small amounts of riboflavin and vitamin B_{12}.

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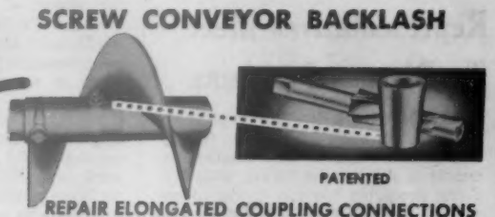

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In milk replacement formulas, breeder rations and other feeds for swine, cattle and calves, Brewer's Dried Yeast acts as a growth stimulant, accelerates the rate of gain, improves the utilization of other nutrients and provides the "extras" in time of stress.

In poultry feeds Brewer's Dried Yeast improves hatchability and viability, stimulates growth, prevents enlarged hocks in turkeys and certain types of leg weakness in ducks and geese.

In specialty feeds for dogs, cats, mink, fish and bees, the incorporation of Brewer's Dried Yeast avoids the risk of nutritional deficiencies, promotes proper metabolism, adds appetite appeal and protects against certain types of infections.

The natural anti-oxidant properties of Brewer's Dried Yeast guard the purity, freshness and palatability of flavor-and-oxidation-sensitive feeds and prevent or retard the development of harmful rancidity and thus prolong storage stability. They also protect oxidation-prone vitamins.

The unique properties of Brewer's Dried Yeast are partly inherent in the strain—Saccharomyces cerevisiae—a "perfect" yeast, and partly due to its matchless growth medium and conditions of fermentation. Because of its high nutritive value, versatility and stability, genuine Brewer's Dried Yeast is favored as a rich source of natural B vitamins and unidentified factors in all types of feed. The tradition of research and experience provides conclusive evidence that it represents a notable ingredient for modern feed formulation. No other yeast expresses so well your insistence on unyielding standards of perfection.

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Turkey Association Representatives Meet To Discuss Problems

DES MOINES, IOWA—Representatives of six midwestern state turkey associations met in Des Moines recently to discuss the turkey industry. Some problems brought to the attention of the group include current and long-range promotion objectives, the control of communicable turkey diseases and the regulatory program pertaining to interstate movement of turkeys.

The group decided no formal organization would be created at this time. For the present, at least, participants will serve in an informal capacity, holding meetings and working together as necessary in the best interests of the Midwestern turkey industry.

At the Des Moines meeting, there was an extensive discussion of measures that might be taken to prevent the spread of communicable turkey diseases. It was brought out that insufficient cleaning of trucks used by processors for picking up market birds is a serious hazard in many areas.

All states are reported to have adequate legislation to take care of such matters, and it was suggested that each state could solve this problem in three ways: (a) Refusing to allow such trucks to come on their farms; (b) urging cooperation of processors; (c) working with the regulatory agencies of their respective states.

The turkey group also discussed the proposed new regulatory programs pertaining to interstate movement of poults, eggs, and breeding stock. It was agreed that the National Turkey Federation should be named to "watch these developments closely," both from the standpoint of fostering practical and worthwhile regulations and preventing adoption of impractical legislation that might serve no other purpose than as "trade barriers."

One man attending the meeting said that certain inequities in freight rates placed midwestern turkeys at a financial disadvantage in some markets. A committee consisting of the secretaries of the six state associations was instructed to get specific information on freight rates in order that further action might be taken on the matter.

It was unanimously agreed that some effective program is needed to bring about greater uniformity in federal inspection and to reduce condemnation of turkeys for items not covered by the regulations.

The group agreed that a request should be made to the National Turkey Federation to try to develop some type of a clearing house program where inequities in application of the inspection program could be brought to the attention of a national and regional authorities. It was suggested, also, that state associations might develop similar clearing house programs for ills of the inspection program.

A. J. Lanz, Devils Lake, N.D., was elected to serve as chairman of the group for the coming year. Roy Munson, executive secretary, Minnesota Turkey Growers Assn., was elected secretary.

Two representatives from each state served as official delegates for the meeting. These include: Illinois Turkey Growers Assn.: Howard Kauffman, Coe Gaulrapp; Iowa Turkey Federation: Earl Maxson, Baxter Freese; Minnesota Turkey Growers Assn.: Sam Haugen, Paul Stone; Missouri Turkey Federation: Carl Stout, Laverne Borron; Nebraska Turkey Federation: Stuart Harrington, Milton Thulin; Wisconsin Turkey Federation: Milford Kintz, G. E. Annin; North Dakota: A. J. Lanz, Chester Ahlin.

HAY MAY CONTRIBUTE TO WORMS IN SHEEP

MADISON, WIS.—Hay apparently contributes to stomach worms in sheep, according to University of Wisconsin animal nutrition specialists.

The researchers said that studies had shown that lambs on natural rations consistently had about 100 times as many worm eggs as those fed a "semi-purified" ration, and that hay may contain a nutrient the worms need.

They said it is possible that solka floc, a hay substitute used in the "semi-purified" ration, may interfere with the synthesis of the nutrient or poison the worms. The special ration contained starch, dextrin, solka floc, ground corn, gelatin, soybean oil meal, salts, lard, urea and vitamin mix.

The finding could result eventually in a new method of worm control in sheep, the researchers said.

Cites High Lamb Profit

FT. STOCKTON, TEXAS — The margin for feeding lambs is better than it has been for the last two years, according to Bert Kincaid, Jr., who owns and manages the Ranchers Feed Yards. He said heavy mutton lambs are available at 13¢ lb. and, when fattened, can be sold for 16-16¼¢ lb.

At present the firm has about 5,000 lambs on feed. This is one of the few commercial lamb feeding lots in southwest Texas and usually keeps the pens filled throughout the year. Practically all the lambs are bought from local ranchers.

ENLARGES FEED MILL

ROCK SPRINGS, TEXAS — The Varga Warehouse is adding a new storage house, 50 by 125 feet in size, and is also enlarging its feed mill facilities by adding a mixer and other equipment. In charge of the feed mill will be Vernon Dutton, who formerly worked for the company but has more recently been engaged in ranching.

These folks are being exposed to PELLET FEVER

Yes . . . Pellet Fever . . . a fever of excitement over the startling possibilities they see for themselves as operators of a Dodgen Portable Feed Processor and Pelletizer. Three of the men shown in the picture above each ordered one of these units to provide this great new on-the-farm or ranch pelletizing and processing service.

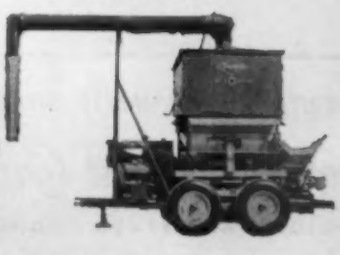
One of these units will be used in New York, one in Colorado and the third in New Mexico. A high spot in the demonstration, shown above, was when observers clocked the bales of hay entering the hay mill at one every 13 seconds. Hard shiny pellets issued forth from the pellet mill and were carried by belt conveyor into a waiting Dodgen All-Purpose bulk truck.

Feeders in the group look forward to the day when this service will be provided in their locality. The Dodgen Portable Feed Processor and Pelletizer represents an entirely new concept of service to agriculture. Maybe you'd like to see one of these units in operation. Just telephone John Dodgen at Humboldt, Iowa . . . HUmboldt 1357. He'll be able to arrange for you to see the pelletizer demonstrated.

OTHER DODGEN PRODUCTS

BULK BODIES—Illustrated is the Dodgen All-Purpose Bulk Feed Body, developed by Dodgen to fill the need for a truly all-purpose unit.

MIX-O-VATOR—A 7 in 1 combination feed processing plant. Mixes, grinds, weighs and elevates feed. Self unloading and hauls easily behind tractor or pickup truck.



PELLET FIRM FOUNDED

Pellets Incorporated, a newly formed corporation in Gregory, South Dakota, took delivery of the Dodgen Portable Feed Processor and Pelletizer shown above. The officers of this company are, from left to right, Jay Dooley—V.P., George Dooley—Secy.-Treas., and Cecil Johnson—President.

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Aureomycin in potentiated feeds gives protection when it's needed most to both broilers and replacement chicks

The potentiation of AUREOMYCIN® (doubling effectiveness by controlling calcium and phosphorus levels in your formula feeds) insures health benefits to poultry that have never been attained before.

AUREOMYCIN in potentiated feeds can lead to substantial reductions in early mortality, reactions to stress, incidence of CRD, synovitis and blue comb. This can mean more broilers to market with fewer condemnations, more pullets to house with the health and vigor needed for top production.

Here are Cyanamid's recommendations for potentiated feeds — to be provided during the first critical weeks in life, at times of stress, and just before market:

1. *To start birds—both broilers and replacements.* AUREOMYCIN at 200 grams per ton of feed, fed during first three to four weeks. Calcium sulfate to bring the total calcium level up to 0.8%. Monosodium phosphate to bring the total phosphorus level up to 0.6%.

2. *For stress periods, or at the first sign of trouble in both broiler and replacement flocks.* A feed containing 200 grams of AUREOMYCIN per ton and no added calcium, fed for 5 days. Other ingredients in the ration will usually give 0.4% to 0.55% total calcium. For longer treatment periods, same level of calcium and phosphorus as (1).

3. *Premarket protection for broilers.* After withdrawal of other medicated feeds, and until birds go to market, a feed containing 200 grams of AUREOMYCIN per ton and 0.8% calcium.

How potentiated Aureomycin cuts losses from CRD and synovitis

Dramatic results have been obtained in laboratory and field trials with potentiated AUREOMYCIN to combat these two costly poultry diseases: CRD and synovitis.

In field trials on flocks with CRD, these results were obtained: mortality in the flocks fed potentiated AUREOMYCIN was cut in half over control flocks; production cost per pound was reduced by a cent-and-a-half; condemnations dropped from 4.6% to 0.6%.

In a laboratory experiment, in which all birds were inoculated with a synovitis-causing agent and treatment started after signs of synovitis appeared, potentiated AUREOMYCIN reduced mortality and increased the number of salable birds:

TREATMENT	SALABLE BIRDS
NO AUREOMYCIN	14%
AUREOMYCIN	43%
AUREOMYCIN POTENTIATED	79%

Reduces market condemnations

Poultry scientists say at least 75% of all condemnations are caused by CRD and synovitis . . . the very diseases controlled so successfully with potentiated AUREOMYCIN in formula feeds.

Responsible for most market condemnations are lesions in the air sacs, joints and breasts caused by chronic respiratory disease and synovitis. Estimates of rejections from these two diseases actually range up to 90% of all condemnations. Today, your customers can *farm-control these two diseases* with the use of potentiated AUREOMYCIN fed during the first three weeks and at times when specific disease or stress conditions show up.

Saves more pullets for top production

Good production in the laying house *starts* with replacement chicks. Potentiated AUREOMYCIN feeds cut early chick mortality, reduce the incidence of infections such as PPLO present at the time of hatching. These feeds also reduce the stress from vaccination, moving, handling, variations in temperature, and protect chicks from CRD, blue comb and synovitis. Your customers can figure on having all, or nearly all, of the flock they started, enter the laying house with the health and stamina needed for top egg production.

Get your PF symbol

Feed manufacturers are invited to write for a special copyprint of the PF symbol for use on bags containing potentiated feeds and in company advertising and literature. Posters, decals and other materials are available. If you wish promotional material or additional information about potentiating AUREOMYCIN, get in touch with your Cyanamid representative. American Cyanamid Company, Agricultural Division, N. Y. 20, N. Y. *®AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.*

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BULK PLANT—This new bulk feed mill is operated by Bartley's Store, Inc., in the heart of an important poultry area in the southern part of Indiana.

DOWN THE ALLEY—Floor view of the ten 15-ton ingredient bins in Bartley's new bulk feed plant is seen here. In the background is one of the newly installed Prater mixers.

Indiana Firm Adds New Bulk Facilities to Gain Efficiency

By Frank M. Simison
Feedstuffs Special Writer

Bartley's Store, Inc., of Ireland, Ind., is successful in its feed milling, farm supply and poultry enterprises because efficiency is a must with the company's management.

This attitude was the starting point for a recent feed production change which already has meant further expansion of feed sales which last year reached $1,127,000.

Lawrence Bartley, the firm's president and major stockholder, said he realized about five years ago that Bartley's Store would have to do something about switching from bagged to bulk feeds.

"We tried to handle bulk feed with the equipment we had, but found this to be an inefficient operation," Mr. Bartley recalls. "So we decided to build the new bulk feed plant we have now."

To accomplish the task of creating facilities capable of handling ingredients and finished feeds in bulk, Bartley's Store had V. E. Fitzpatrick & Co., Burket, Ind., install, through the roof of a bag feed warehouse: Ten 15-ton ingredient bins; four 2,000-bu. corn storage bins, and ten 10-ton elevated bins for loading finished feeds into bulk trucks.

Also installed were new mixers (Prater), a batch scale, and a feed conveying system (Shelby). A Knoedler burr mill, used by Bartley's for some time, was incorporated in the new plant.

Because the Bartley feed plant has no railroad siding, the Ralston Purina dealership erected a track hopper car unloading system at Jasper, four miles from Ireland. Concentrates are trucked from Jasper to the feed plant.

"This new mill is automatically controlled and very efficient," Mr. Bartley says. "With it, one man can make 100 tons of feed per day, as long as it is bulk feed. The bulk ingredients are weighed out on automatic scales as they come from the storage bins, then dropped into the mixer. Finished feed is conveyed automatically from the mixer to bulk trucks. This system saves all the labor formerly wasted on bag handling, thus giving us better profits."

Farm Store, Hatchery

The business of Bartley's Store involves more than mixing and selling feed. A new, adequately equipped farm supply store fronts for the whole enterprise. And there is a broiler chick hatchery near the bulk feed plant.

Shareholders in this business are (besides Lawrence Bartley): Herb Bartley, Lawrence's brother and vice president; Pete Blarmel, secretary-treasurer, and Linus Rudolph, hatchery manager.

Like many other similar feed operations in southern Indiana, Bartley's Store is closely associated with poultry production. In this connec-

CONTROLS — Shown here are controls which operate semi-automatic mill at Ireland, Ind.

SIDE VIEW—Feed manufacturing, storage and farm store buildings are seen from the rear in this picture.

FRONT VIEW—Fronting street are the feed warehouse, hatchery and office building of Bartley's Store, Inc., Ireland, Ind.

tion, the business has developed its own marketing system. The store grew out 400,000 turkeys last year—and this year's total will be about the same.

The Bartley hatchery is a broiler chick proposition, with the chicks put out on contract to local growers and 2¢ lb. guaranteed the contracting poultrymen. Four hundred thousand broilers were grown in this way last year, with Bartley's furnishing chicks and feed.

The turkeys in which Bartley's Store is interested are grown under the conventional arrangement of the company furnishing or financing the feed rather than a contract operation like the broiler business. Contracts in turkey growing aren't very popular in southern Indiana, Mr. Bartley says.

The turkey and broiler business in the Ireland area is thriving and profitable, according to Mr. Bartley, because of what Bartley's Store is doing and because of Purina organization working in the area with the dealerships.

"The reason for turkey interest declining in some localities is that they don't have a good sanitation and management program," Mr. Bartley says. "Good sanitation and management make for profits. Although the market price is lower than it used to be, there still is the chance of a good profit in turkeys for the skilled and efficient operator."

Lawrence Bartley got his start in the broiler and layer fields some 25 years ago. "I began with 10 or 12 customers, and grew to a peak of 100 growers in 1949," he observes. The Ireland, Ind., operation has maintained this peak ever since.

Work With Growers

Through the efforts of local county agricultural extension agents and the experience of Lawrence Bartley, the Bartley organization has worked very closely in the field with local growers.

"We have customer contacts with good proven records, established in this territory, and these have won us a lot of new customers," says Mr. Bartley. "By starting in a small way and by keeping good, accurate records by which we could prove to others how much money could be made with a good feed program, we have gone ahead and built a solid business with satisfied customers."

LOADING—Bulk delivery truck is loaded with bulk finished feeds from overhead bins. Recent installations at Bartley's Store, Inc., Ireland, Ind., include ten of these 10-ton load-out bins.

Lawrence Bartley gives the Ralston Purina Co. credit for the part it has played in organizing and expanding the poultry interest around Ireland. "Purina has had its experienced men working with us through our developing period, calling on customers and explaining breeding, sanitation, feeding and management programs," he says.

Bartley's has two outside service salesmen making customer calls and contacts every day.

Ralston Purina Co. Executive Honored

ST. LOUIS — More than 1,200 friends, employees and business associates paid tribute to Donald Danforth, chairman of the board of Ralston Purina Co., on the occasion of his 40th anniversary with the firm recently.

As part of the observance, the sixth-floor auditorium of the firm was dedicated as "The Danforth Room" honoring Donald Danforth and his late father, William H. Danforth, founder of the company in 1894.

Mr. Danforth was presented with a 40-year pin and two shares of Ralston Purina stock during the program.

MANAGEMENT PERSONNEL—Men responsible for the success of Bartley's Store, Inc., Ireland, Ind., include, left to right: Sitting—Herbert Bartley, vice president; Lawrence Bartley, president; Linus Rudolph, hatchery manager; standing—Warren L. Frank and Richard Basey, Ralston Purina Co. representatives.

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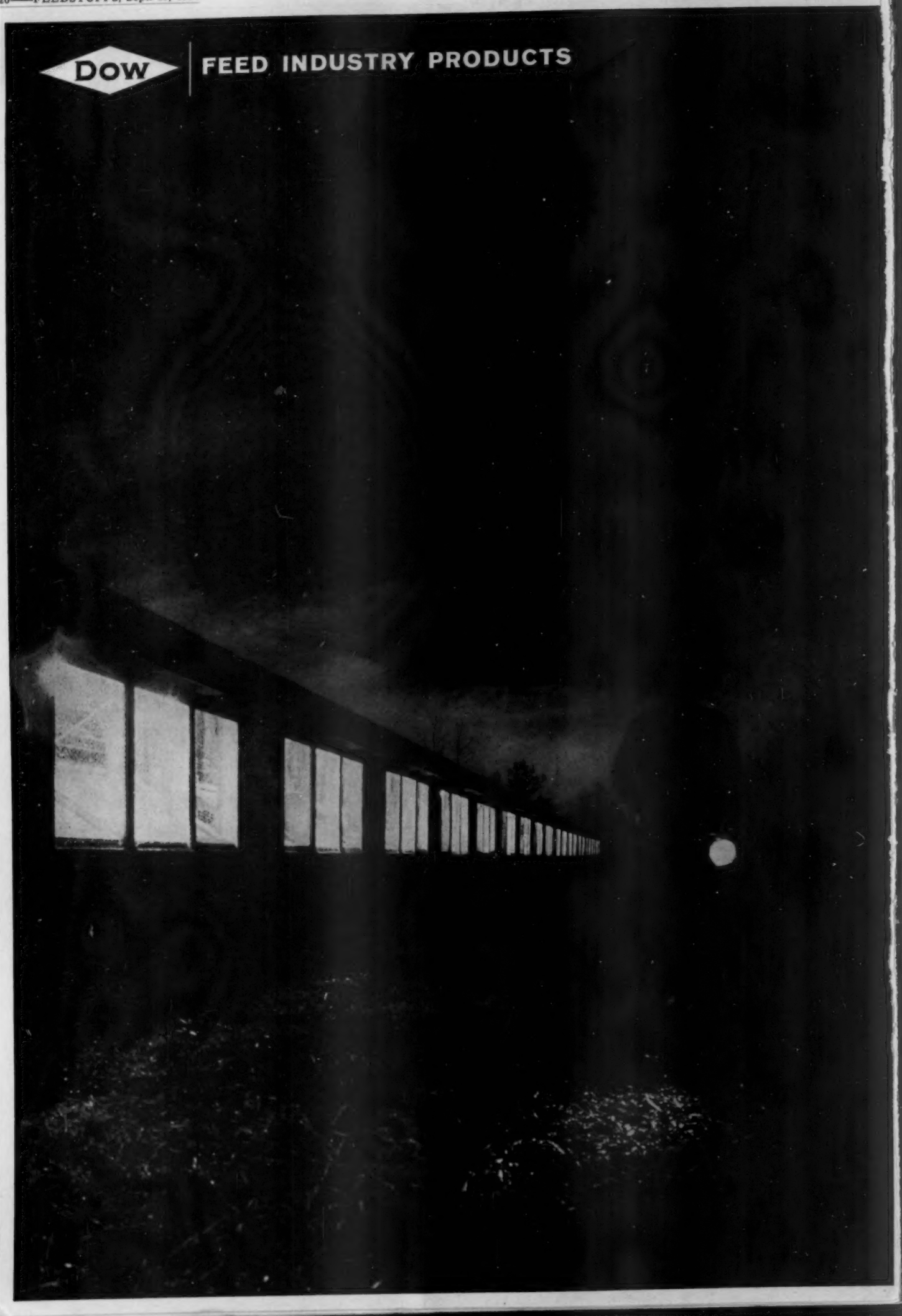
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New coccidiostat gives broiler feeds extra protection, greater safety, won't depress feed efficiency!

Tests conducted by feed manufacturers, independent laboratories, and experiment stations prove Zoamix provides unsurpassed coccidiosis protection. Experiments conducted under widely varying field conditions show Zoamix is highly effective against strains of coccidia of concern to growers.

Zoamix will not depress rate of gain or feed conversion. You can be sure flocks will take advantage of all the nutritional potency you pack into your broiler rations! And very often 10,000 birds will return an extra $250 profit (frequently *much* more) over flocks fed other coccidiostats.

What's more, Zoamix causes no physical injury if accidentally fed to laying flocks or farm animals. It's compatible with common feed ingredients, drugs and additives . . . does not require a withdrawal period before marketing . . . and won't impart any "off" flavors to the meat! Feeding Zoamix results in no change in histology, hematology or organ weights. Assaying is speedy, simple. Zoamix can be pelleted and repelleted, will not cake or lose potency even when stored for prolonged periods.

These combined advantages have led many leading feed manufacturers to switch to Zoamix. How about your brand? Write for full technical information and registration assistance to Feed Industry Sales Section, Agricultural Chemicals Department.

See "The Dow Hour of Great Mysteries" on NBC-TV

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MIDLAND, MICHIGAN

FEED CONTROL COMMENT

By BRUCE POUNDSTONE
Secretary, Association of American Feed Control Officials
Kentucky Agricultural Experiment Station, Lexington

Feed Labeling — Today and Tomorrow

Protein, fat and fiber are the basis of guarantees on feed labels. This has been true since the passage of the first feed laws. In recent years these expressions have frequently been the target of criticism by nutritionists and others. Knowledge of feeding has expanded far beyond early concepts. The late Lyman Peck remarked on one occasion that he could make a feed that would meet the protein, fat and fiber guarantees by blending such things as ground leather, chicken feathers and saw dust. This was to illustrate that meeting the chemical guarantees only may not result in a satisfactory product.

What then should be used as the basis of a feed guarantee? It is at this point that those critical of this method of guaranteeing feeds modestly admit that no one has been able to improve upon this system. No better alternative at the moment is available. At least no one has suggested alternatives with any real seriousness.

Ingredient listing is the other important aspect of feed labeling. This involves the naming of each ingredient by the "common or usual name." In the early days of feed manufacture, feed formulas were "simple mixtures" of what were then known as more or less common products. Ingredient listing under such circumstances was a simple matter. With refinements in the processing of by-products, the listing of ingredients has become more and more of a problem.

This has many facets. By insisting upon the "common or usual name" and with new names derived from basic differences, we therefore have greatly multiplied names. Sometimes these names and products are so closely related it becomes difficult to make a distinction. An example of this may be found in the listing of distillery by-products. The name of the grain from which the product is derived becomes a part of the name. If the product is derived from corn, then the name is corn distillers dried grains. If it is from rye, it will be rye distillers dried grains. Some distilleries, however, use more than one grain. These may be blended in manufacture so that the product becomes not corn distillers dried grains but a blend of two or more of these.

Recently milo has entered the distilling picture. The result is a distillers product which, so far as is known, closely resembles corn distillers dried grains that for all practical purposes might be handled similarly in dairy feeds, for example. This illustrates but one of the many points in feed labeling when a single term might be developed if the philosophy of feed laws would permit it.

The reservoir of products from which a manufacturer may now select his ingredients has expanded almost beyond comprehension. The introduction of drugs, yeast products, vitamin products and preservatives (to mention but a few categories) has greatly multiplied the list. Along with this we have been led to the reproduction on tags in ingredient lists, names in the form of long "jaw breakers" that few understand and fewer can pronounce.

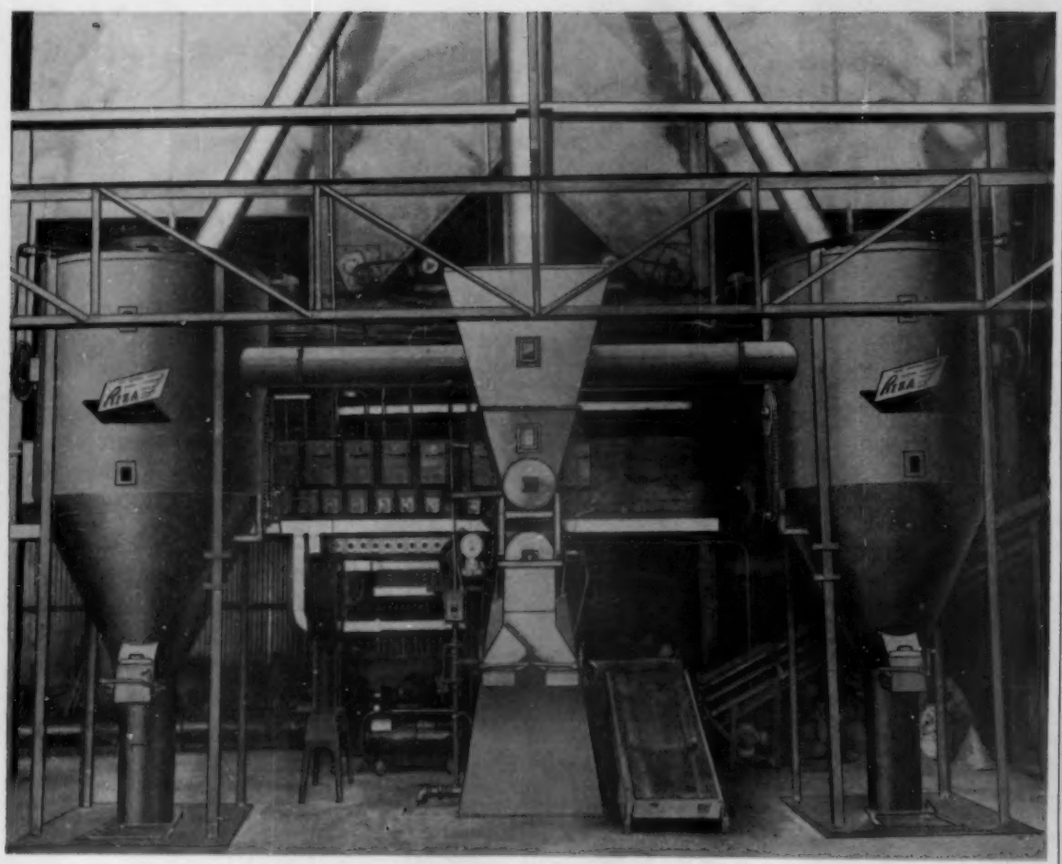
This is an "old story" to anyone closely associated with the feed business during the past decade. And like the weather, there seems little to be done about it. But perhaps something could be done about it if necessity is apparent and alternatives worked out.

May Have to Be Changed

The system of labeling currently in use has undergone little or no change since the first feed laws were passed before the turn of the century. This is testimony to the soundness and workability of the original plan. On the other hand, just because this has been satisfactory over a long period should not detract from the possibility that it may some day have to be changed.

The complicated feed formulas in use today, with dozens of ingredients and with such factors as amino acid and mineral balances a consideration, are enough to lead to questions as to whether or not guarantees for protein, fat and fiber with attendant ingredient listing are the best or only method for representing these products. Now newer methods of feed formulation are being introduced. Linear programming is being applied to feed formulation. This calls for

Announcing the new Riza PRE-ENGINEERED SIM-FLEX BULK FEED PLANT



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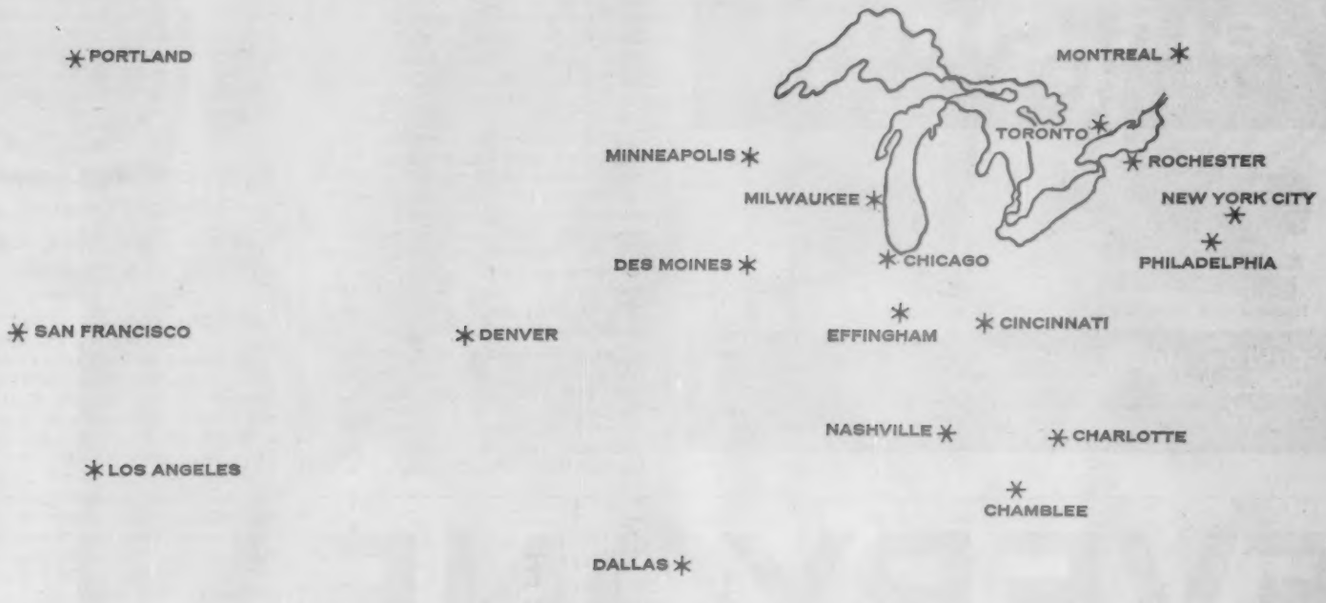

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immediate changes in formula if full advantage is to be taken of such precision. One is led to ask if labeling under our present system will meet this and other needs satisfactorily.

The time may have arrived when a meeting of minds is needed to review, re-examine and re-evaluate our present system of labeling in the light of modern developments. This might be a good time to take a look at each point now required in labeling with the view of deciding whether or not it is significant, effective and meaningful. Such examination could lead to the conclusion that some items are superfluous. Other aspects may not at present be adequately covered. If so, steps should be taken to outline alternative systems.

One of the talks to be given at the coming meeting of the Association of American Feed Control Officials in Washington, D.C., Oct. 12, is entitled "Feed Formulation by Linear Programming and Its Effect on Feed Control Work." This discussion is to be given by Warren A. Armstrong of the Nutrena Mills, Inc. Nutrena was one of the first to utilize the electronic brain in its application to commercial feed formulation. This discussion may throw some light on the problem as to whether or not the time has arrived when we need to seriously review labeling policies.

Salesmanship, Disease Prevention Stressed at New Mexico Meeting

By DR. D. W. FRANCIS
New Mexico State University

LAS CRUCES, N.M. — The importance of salesmanship and disease prevention was stressed here recently by Prof. George Quigley, poultry husbandman at the University of Maryland. Prof. Quigley spoke at a meeting of the Rio Grande Poultry Assn. held on the New Mexico State University campus.

He urged poultrymen to obtain the best birds for egg production. The random sample test reports were suggested as the place to obtain information on the present stock that is available to poultrymen.

The second important point to consider, Prof. Quigley said, is disease prevention. A 23% laying house mortality is too high, he stated. The poultry husbandman pointed out the need for a quick, accurate diagnosis of disease conditions by a competent diagnostic laboratory. Because of the similarity of many diseases a diagnosis cannot be made in the field. Prof. Quigley emphasized that poultrymen must work with the diagnostician. Specimens, typical of the disease, in excellent condition, must be provided the diagnostician, along with a complete history.

Poultrymen have permitted a decline in the per capita consumption of eggs, according to the professor, because they have failed to sell their products. "They have neglected to promote the egg as the most nearly perfect food for adults. The cholesterol situation is not understood—yet because of scare campaigns the egg is discriminated against. But there is just as much, if not more, evidence praising the egg as there is condemning it.

"The poultryman must get out and practice salesmanship by promoting his healthful product," Prof. Quigley added.

Specifications Set

MADISON, WIS.—Feeds, seeds and agricultural chemicals are among 12 additional classes of items bought by Wisconsin state agencies for which standard specifications have been set, Joe E. Nusbaum, commissioner of the Wisconsin Department of Administration, said.

Under this program, a standard specification is set up for a certain commodity, and a contract is awarded to the low bidder covering the requirements of all state agencies using that commodity.

Mr. Nusbaum told Gov. Gaylord Nelson that the new classes will enable the state to save about $49,000 a year on the 12 items through competitive bidding and mass purchase.

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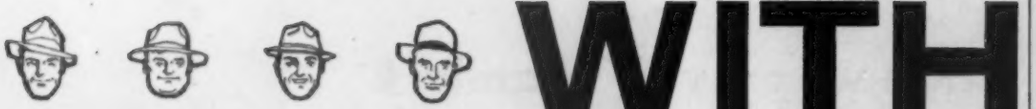

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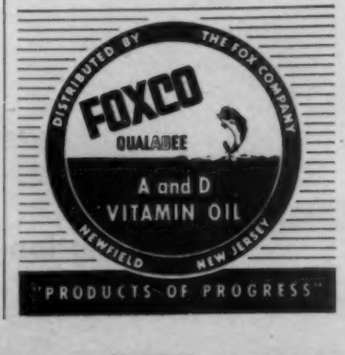

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Compares Southern Poultry Industry With Midwest's

LINCOLN—A midwesterner, back from a tour of poultry industry operations in the South, says the southerners have an edge on their contemporaries to the north because of large operating units and extensive marketing programs.

His comparative observations are not one-sided, however.

This particular appraiser of the poultry situation in the South, Doyle Free, executive secretary of the Nebraska Poultry Improvement Assn., Inc., Lincoln, reports in a recent bulletin issued by his group:

"The poultry industry in the South is young; most of the housing and equipment has been built since 1950. Automation is used extensively in production and marketing. Leaders of the industry in the South are aggressive, imaginative and willing to spend the time and effort needed to develop a program to the fullest extent. This is a real contrast to some midwestern areas where most of the poultry still is produced in houses built 30-40 years ago and are so small and poorly equipped that it would be impossible for producers to make a profit even under the best of conditions."

"The Midwest, because of its general type farm, low feed costs and nearness to some of the large population centers, has an advantage from the standpoint of production. The South has an advantage from the standpoint of labor and low cost housing, but most important is the advantage southerners have in their large units, their marketing programs and their modern labor-saving equipment which result in the production of large quantities of uniform, high-quality eggs."

● Areas in the South have developed strong poultry and industrial manufacturing programs and are enjoying a standard of living that is higher than in some midwestern communities.

● "Government programs and high production costs have changed the 'way of life' in many southern communities."

Land in Soil Bank

Mr. Free, who has seen how broilers and eggs are produced in Georgia, Tennessee, Alabama and Mississippi, says, "It is not at all uncommon to find a rural family that has put its farm into the soil bank or planted it to grass, has 10-20,000 broilers or 5-10 000 layers on contract and, in addition, has a member of the family working in a factory."

Contributing to the changes that have come to the South's "way of life," he says, are the great acreages of land diverted from the growing of tobacco and cotton to other uses. "Many farmers found it practical to put their land in the soil bank and work in a factory or sow their land to grass and grow beef cattle," Mr. Free observes. "Some of the better farmers grow corn and soybeans as rotation crops for cotton."

He adds: "One should not be misled by high government support programs. High corn support prices in the Midwest have caused new production in the South," which has reduced the southern market for Corn Belt corn. "Farms sowed to grass are now growing large herds of Angus and Hereford cattle.

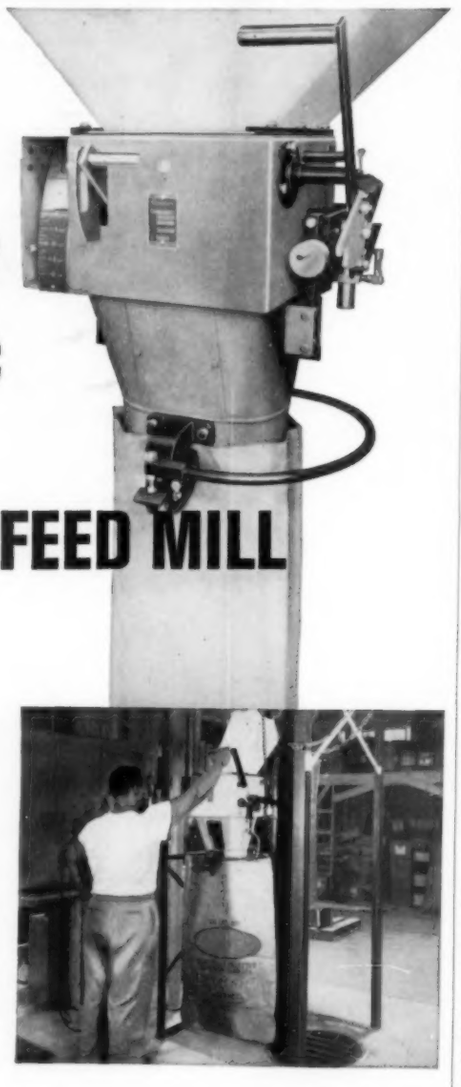
"Frankly, Nebraska (and the Midwest in general) should be more concerned about what is happening in agriculture as a whole in the South than its possible loss of the poultry industry."

Optimistic, But Cautious

Mr. Free is optimistic about the future of the poultry industry in Nebraska—if poultrymen are "willing to discard antiquated equipment and old fashioned ideas about marketing eggs and develop a modern program.

"On the other hand," he says, "if the Nebraska poultry industry continues to be satisfied using horse and buggy equipment, production and marketing methods, it had better pack up its marbles and go home. Other areas will win through pure, simple determination and economics of production and marketings."

7 Ways Richardson G-17 Semi-Automatic Baggers
SAVE MONEY IN ANY FEED MILL



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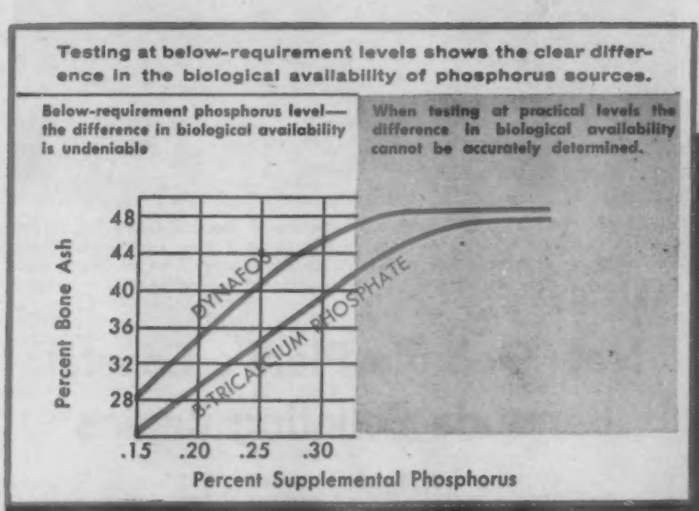

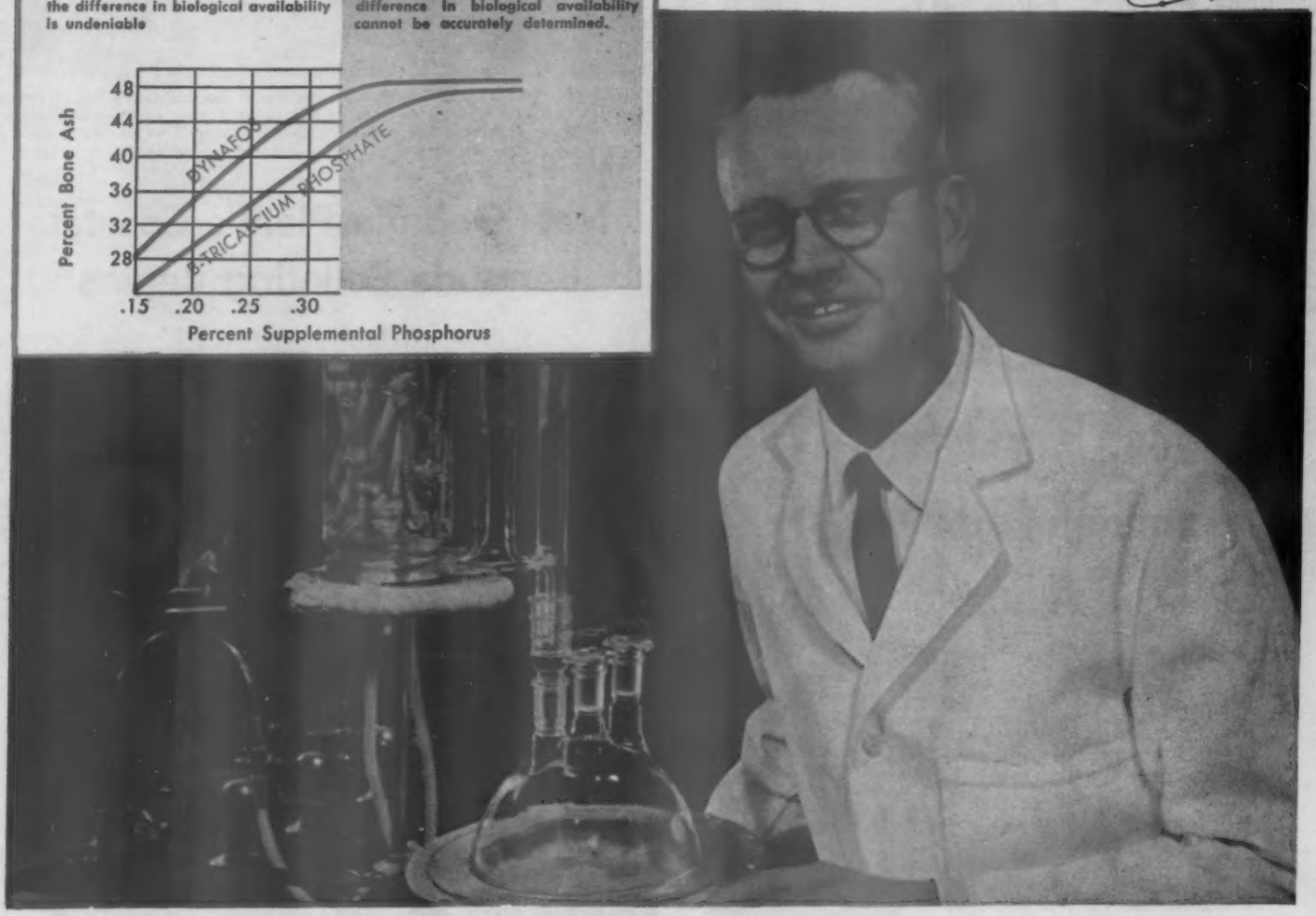

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VIEW OF PLANT—This is a view of the Graco plant at Cairo, Ga., where Coastal Bermuda is being dehydrated and pelleted on a commercial basis. The pelleting equipment is in the white building. When the process is completed, the pellets are carried via an overhead drag conveyor to the warehouse at the left.

New Georgia Plant's Coastal Bermuda Pelleting Begins

By Robert H. Brown
Feedstuffs Special Writer

Working on a 24-hour production schedule, the Graco Dehydration Plant at Cairo, Ga., expects to have on hand about 2,500 tons of pellets made from Georgia's Coastal Bermuda in the first commercial production of the grass in this form in the state.

In a large warehouse adjoining the plant, just north of town, 1,500 tons have already been pelleted and ready for the market at this writing, although officials of the plant are quick to point out that practically no effort has been made as yet to dispose of the pellets; they've been too busy with the inauguration of production and plans for additional equipment.

They are confident, however, that come cold weather and a shortage of roughage, they will find a ready market.

The plant has been on a full production schedule since May 15.

Quite a few inquiries have come into the plant from prospective buyers and feed men, and agricultural leaders and feeders have visited the plant to see how the pelleting is being done, according to Robert Johnson, one of the company officials. H. T. Legette and Robert Sellers are associated with him in the company, which is also engaged in the fertilizer, feed and allied agricultural industries in Cairo. Mr. Johnson feels there is a good field for use of the Coastal Bermuda pellets not only in poultry and other feeds but also by ruminant feeders.

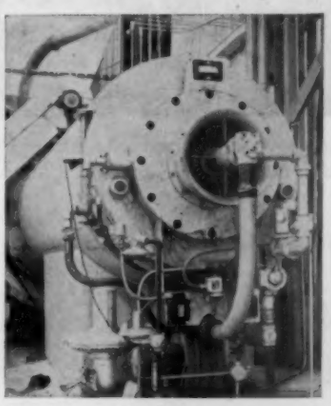
Inquiries Heavy

With the arrival of cold weather and the need for roughage, he says, advance inquiries indicate the sales will take care of themselves. Mr. Johnson believes the Coastal Bermuda, of which there is a fairly plentiful supply in south Georgia every year, will fit into the formulas of large as well as small feed mills and into ruminant feeding programs.

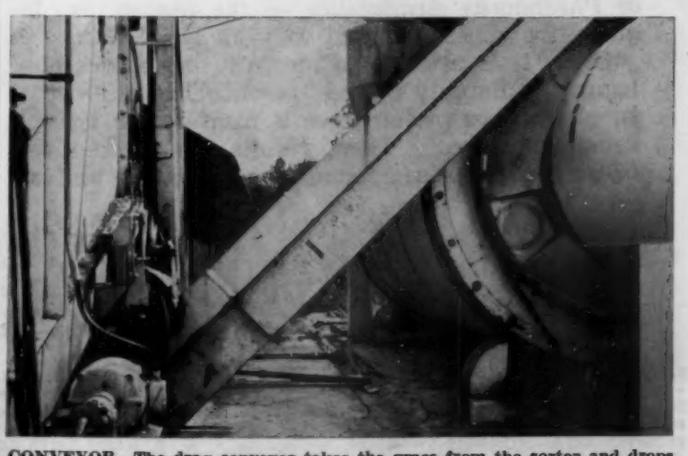
Just recently, he said, a large feeder in the Midwest telephoned to inquire about obtaining some of the pellets for cattle feeding. He wanted to make tests, and this was the initial shipment from the Cairo operation.

Mr. Johnson points out the efficiency of transportation of pellets rather than hay and other bulky roughage. "The savings in transportation alone should be an incentive for their use," he says.

The company leased 500 acres of land to produce the grass for the plant, and so far six cuttings have been made from this acreage. The farmer sets out the grass and the company does the fertilizing. Produc-



DEHYDRATOR—Natural gas is the fuel used for heating and watchful eyes are kept on the temperature gauge at the top of the dehydrator. This is where the grass enters, through the conveyor at the upper left.



CONVEYOR—The drag conveyor takes the grass from the sorter and drops it into the dehydrator where it takes about 10 minutes to have 90% of the moisture removed. From the time the truck unloads and the grass starts through, the pellets are formed in about 40 minutes.

DEHYDRATING CYLINDER—The dehydrating cylinder is located beside the steam house, back of the main building. Temperature in one end goes up to 1,600 degrees and at the other down to 290.

tion has been better than a ton of grass per acre, says Mr. Johnson.

At intervals of approximately 30-40 minutes, a 2-3 ton truck load backs up to a hydraulic lift; the grass is dumped into the lift. As the grass is poured into a cylinder, a reel smooths it out, loosens it and regulates the flow into a drag line conveyor which carries it over to the dehydrator. This operation is out in the open behind the main building, which houses the pelleting machine and coolers. The dehydrator is also located behind the building.

As the grass enters the dehydrator, it meets with a temperature of 1,200 to 1,600 degrees and, in approximately 10 minutes, the temperature has dropped to as low as 290 as the grass nears the far-end exit.

This takes out 90% of the moisture, leaving 10% to provide a good adhesive quality for pelleting, says Carroll Williams, superintendent of the plant.

Before the dehydrated grass moves to the processing facilities via an overhead pull, all heavy stems and foreign matter are dropped out, via a chute at the end of the dehydrator. This is burned.

Natural gas is being used as the heat source, and it is proving to be entirely satisfactory, according to Mr. Williams. It provides a steady heat essential to the operation and requires no tending.

Sent to Cooler

After the grass leaves the California pellet mill, it is sent through a cooler which adjoins the pelleter. From there, the pellets are lifted, via bucket elevator, to the top of the plant, and then put into another drag conveyor which runs across the lot some 150 ft. to the warehouse.

Pointing out the adaptability to ease in pellet forming, Mr. Williams says no oil, such as soybean, is being used in the process. The pellet is plenty durable so far as wear and tear are concerned, he adds.

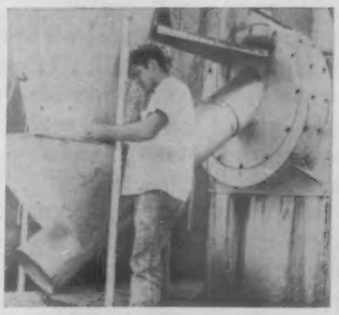
An inspection of the first bin filled with the initial batch produced showed only a minimum of fines even though they are having to travel through conveyors from one building to another.

Drag conveyors, he says, have played an important part in the good condition in which the pellets have arrived at the bins. The builders of the plant have taken into consideration the need for straight conveyors wherever possible, and this also has lessened the chances for fines.

With the end of the production season not too far away, Mr. Johnson and other company officials are looking forward to increase further the efficiency of the plant by adding in-and-out facilities during the winter months.

"We are optimistic in our belief that our pellets will find a ready market when we get into the selling end of the business. With Georgia being the number one broiler-producing section of the nation, we feel a lot of producers will find Coastal Bermuda useful. Also, we know cattle growers will find it entirely satisfactory, based on experimental work now being done," he said.

The use of Coastal Bermuda in



STEMS SIFTED OUT—As the grass comes from the dehydrator, foreign matter, big stems and such are sifted out and burned before the grass heads, via an overhead conveyor, to the mill facilities.

CHECKS PELLETS—An employee checks the pellets made in a California mill before they go into the cooler adjoining the mill.

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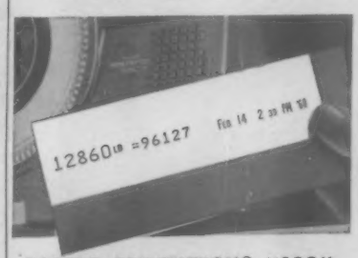

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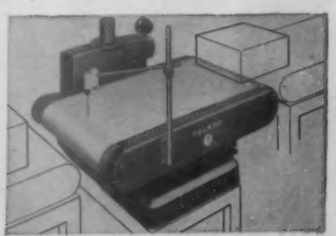

CHECKWEIGHS IN-MOTION

Many plants today are putting Toledo Automatic Checkweighers into their conveyor lines. Models to provide continuous, 100% in-line checkweighing of items from a few ounces to 200 pounds. Motorized belt. Handle sacks, cartons, packages, pieces, parts. Ask for Bulletin 2968.

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Gives accurate *net* weight listing and totaling of bulk materials going into truck or carload shipments. Weighing is automatic. You save time, control costs, reduce claims. The Toledo Control Console which interlocks all components may be remotely located for operating convenience. Ask for Bulletin 2490.

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BINS—Two bins of pellets of approximately 750 tons each are shown here in the warehouse. The conveyor is attached to the ceiling.

livestock feeding has attracted wide attention, and there has been a good deal of interest in and research work on the pellets for cattle rations. Some persons have predicted a broad expansion in this field in the southeast.

Vermont Group Schedules Meeting

BURLINGTON, VT.—The Vermont Feed Dealers and Manufacturers Assn. will hold its 18th annual meeting Sept. 29 in the Hills Building at the University of Vermont.

Dr. L. A. Moore, chief of the dairy cattle research branch of the U.S. Department of Agriculture, will be one of the main speakers. Among the others are John T. Fey, University of Vermont president; Dr. J. R. Wadsworth, Vermont extension animal pathologist; Dr. T. W. Dowe, director of the Vermont experiment station; Prof. D. C. Henderson, chairman of the Vermont poultry department; and Dr. A. M. Smith, assistant professor in the department of animal and dairy husbandry.

Registration begins at 10 a.m. Dr. Fey starts off the morning session with a welcome address, Dr. Wadsworth will speak on "First Aid on the Farm," and Dr. Moore will discuss "Feed Additives."

After lunch, Dr. Dowe will speak on "Animal Husbandry Nutrition in South America." Professor Henderson will talk on "The Future of Vermont Agriculture—Poultry," and Dr. Smith will discuss the future of Vermont dairying.

The annual business meeting will be followed with a banquet and entertainment.

Directors of the association are: Raymond Bumps, Middlebury; H. G. Savage, Bennington; Richard Ide, St. Johnsbury; A. S. Morrill, Burlington; Ray Durfee, Bethel; A. S. McKillop, St. Albans; James Clelland, Alburg; Arlan Sweet, Jeffersonville; Stanley O. Baraw, Danville; E. M. Brown, Barton; A. W. Barrows, Whiting; Raymond Smith, Montpelier; Glenn Danby and Charles Landry, Brattleboro.

Georgia Broiler Raisers Warned About Threat Of Brooder Pneumonia

ATHENS, GA.—Milton Y. Dendy, extension poultryman at the University of Georgia, has warned broiler growers in the state to take steps to avoid outbreaks of aspergillosis.

In a recent letter to broiler growers, Mr. Dendy said, "A recent report from Delaware indicates that cases of aspergillosis are on the increase in that area. The cause has been traced to moldy feed in bulk bins."

Aspergillosis, often called "brooder pneumonia," is caused by the fungus Aspergillus fumigatus. This mold is widely distributed in nature, and will usually occur in most organic matter if moisture and temperature conditions are favorable. The spores of this mold are easily inhaled by chickens when they come in contact with moldy materials.

The spores grow inside the respiratory tract of the birds, and cut off the passage of air to the lungs and air sacs.

"The symptoms have been described by several veterinary writers," said Mr. Dendy. "In 8 to 12 days after becoming infected, birds may show droopiness, ruffled feathers, high body temperature, reduced appetite, darkened combs, and a great thirst. As the disease progresses, there is marked diarrhea, emaciation and weakness. After four or five days, the birds become prostrate, gradually pass into a coma, and die.

"A Delaware report advises poultrymen to clean and air their bulk bins each time before refilling with feed. This will help to prevent moldy feed accumulating around the sides of the bin and later becoming a source of infection for the chickens. Wet spots or caked litter should also be removed promptly," concluded Mr. Dendy.

Feed Shipments Show Decline in Canada

OTTAWA—Shipments of primary or concentrated feeds in Canada showed a decline during June from the same month a year earlier. Shipments in June this year amounted to 31,965 tons as compared to 34,336 tons in 1959.

Secondary or complete feeds dropped to 202,548 tons during the same month from last year's mark of 205,475 tons. All other animal feeds dropped fo 41,495 from 44,428 tons.

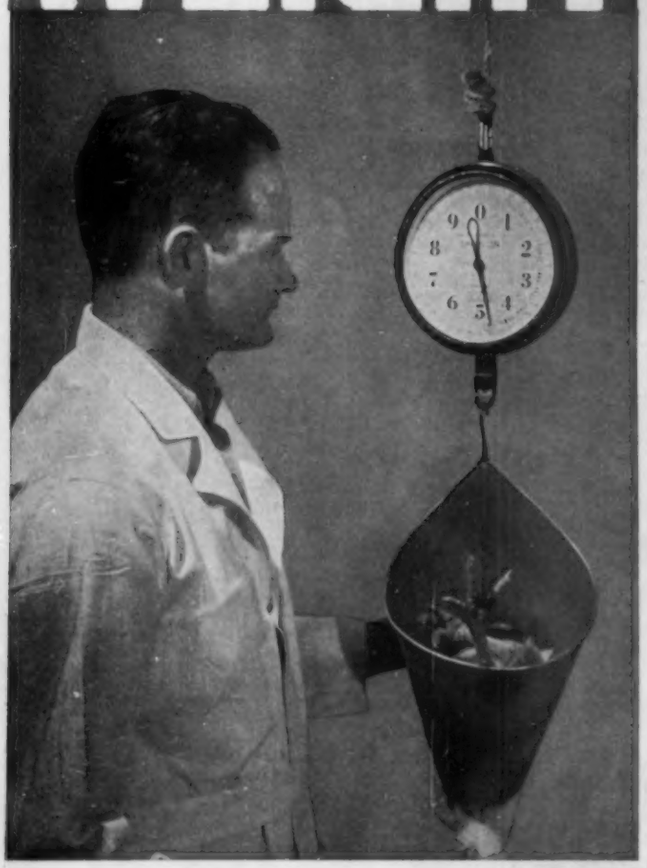
Half-year shipments were also down from 1959 for all three main types: Primary feeds fell to 215,025 from 233,126 tons; secondary feeds fell to 1,228,012 from 1,307,532 tons, and all "other" animal feeds dropped to 265,881 from 270,531 tons.

FEED STORE OPENS

SIERRA VISTA, ARIZ. — Herbert Keeling has opened Herb's Feed Store here.

we're putting on

WEIGHT



3/10 lb. per year at 8 weeks

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We *know* what our birds can do. We're not only putting more weight on the Peterson Male, we're putting more weight on millions of broilers — wherever broiler men and processors have discovered the advantages of a Peterson Cross. Better see that your broilers are sired by this year's Peterson Male . . . it's the best breeder cockerel we ever produced.

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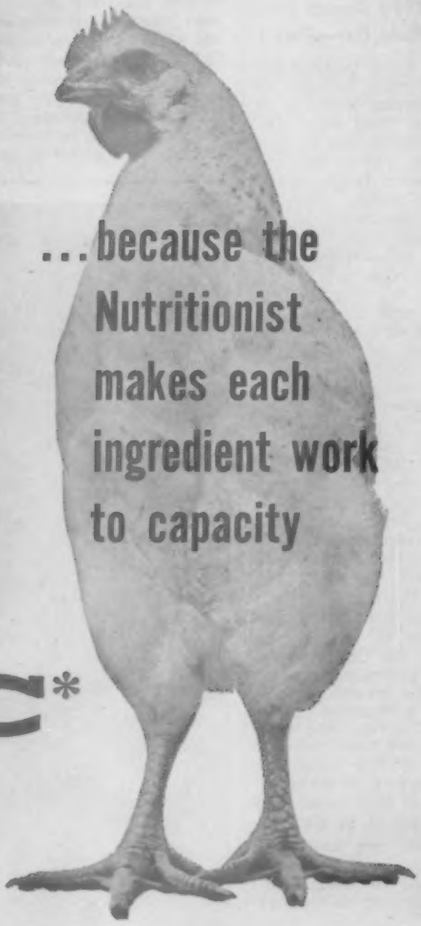
Faster to market



...because the Nutritionist makes each ingredient work to capacity

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Today's nutritionist is sensitive to the need for broiler rations in which every nutrient is put to work. His formulations are designed to capture maximum value from each ingredient for most rapid weight gains. Many nutritionists find our product Omafac of considerable help in this job of developing efficient feeds which get birds to market fast—at lowest cost.

As little as 0.5% Omafac can replace 4% to 5% Crude Unknown Growth factors, generally supplied in fish solubles (dried basis), whey, distiller's solubles, etc. As a special "faster to market" bonus, Omafac adds other important nutrients to the formulation—streptomycin, vitamin B_{12}, protein, calcium, and phosphorus.

Omafac is produced by Squibb from dried penicillin and streptomycin residues. Omafac is always in dependable year-round supply, the analysis on the label is guaranteed. Mere facts supplied on request.

Another Important Feed Ingredient

Another important ingredient for *all* feeds is Squibb Procaine Penicillin G, a special grade of penicillin with *Controlled Particle Size*[1]. Has exceptionally high degree of stability in mash or pelleted form. Flows freely and mixes readily, will not lump or cake.

Available as 100% procaine penicillin unmasked by carrier, or as 80% and 50% in oyster shell meal.

FREE: Send for Technical Bulletin containing stability data, recommended usage, etc. Write today to: Chemicals Sales Department, E. R. Squibb & Sons, Div. of Olin Mathieson Chemical Corporation, 745 Fifth Ave., New York 22, N.Y.

1. Patent applied for

*OMAFAC is a Squibb trademark
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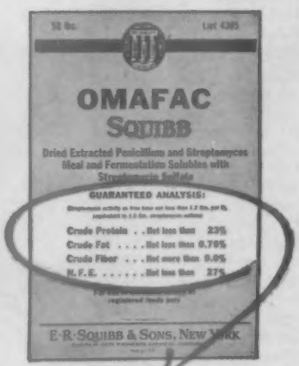
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GUARANTEED ANALYSIS:
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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

A Brief Summary of Certain Reports from the 1960 Annual Kentucky Livestock Field Day—Part 1

It has become quite popular for the various land-grant colleges to give reports of current research in progress at various "field days." Often, the first announcement of new research is made by this method, and the results are known before actual publication in the various scientific journals. Since publication in the scientific magazines usually entails critical review by an editorial board of other qualified scientists, it is only rarely that "pilot" or "progress" reports are allowed to be published except as news items or brief technical notes. This attitude on the part of scientific press (quite properly, I might add) has hastened the popularity of college workers getting their research out in the public eye by means of field days, etc. College research is quite competitive, believe it or not, and the pressure is sometimes quite great to be first out with some new piece of work. Nevertheless, field days and allied events have become quick means of informing the public and keeping us all abreast of the current state of affairs.

One of the major field days in the midwestern section of the U.S. is that conducted by the University of Kentucky. So much material was presented at the last meeting that it could not readily be handled in the traditional manner of reporting these events in the regular news columns of Feedstuffs. It is also somewhat difficult for the layman to correlate all of the reports in light of what is known and to apply it to his own programs; therefore, we have felt that some comments and review of the program would be worthwhile, particularly as they apply to the feed industry.

BEEF CATTLE SECTION: Several colleges have been investigating various aspects of pelleting for the various classes of livestock. A few, notably Arizona, Arkansas, Oklahoma, Kansas and Illinois, have investigated the effects of method of grain preparation on cattle gains. Certain of these stations have compared grinding, rolling and cracking, as well as pelleting. The Kentucky workers compared pelleted corn, flaked corn and ground corn in steer fattening rations when fed along with corn silage and distillers solubles (either pelleted or regular). Both pelleting and flaking increased daily gains of the steers (approximately 0.4 lb., daily) and improved feed efficiency (approximately 140 lb. per 100 lb. gain). When one considers the value of the increased gain and feed savings and using the market prices, the pelleted corn and flaked corn were each worth about $8 per ton more than ground corn even when flaked corn was charged out at $72 per ton, pelleted corn at $59, and ground corn at $43.20.

The Kentucky results are quite interesting because the responses are quite good for pelleting and flaking. Oklahoma workers have investigated the effect of pelleting, grinding, and rolling of milo for several years. In past studies, these researchers showed that finely ground and pelleted milo was utilized about 10% more efficiently than dry, rolled milo of a medium degree of fineness. While the pelleted product was less palatable than the steam rolled milo, it resulted in faster gains. In the report of recent work in this field (1960) from this section it was shown that very finely ground (processed through a ⅛ in. screen) milo produced the highest gains and feed efficiency. Such a product is considerably finer than most cattle feeders prefer, but it does raise the fundamental question as to the best particle size for efficient gains. Also, the question still remains to be answered, "Is the ideal particle size the same for all grains?" We still need more research in this interesting area and should not attempt to apply results until further work is reported.

The Kentucky workers also reported that rather high levels of urea in steer fattening rations could be used (approximately one-third non-protein nitrogen) in all pelleted complete rations, providing a high amount (10% molasses) of quickly available source of carbohydrates is used in the ration. The ration of 600 lb. ground corn cobs, 1169 ground yellow corn, 200 molasses and 31 urea gave equal results as one including the same

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In old-fashioned bulk feed tanks the boot creates a problem. Feed flow is restricted, which causes bridging in the hopper. And, with the slide valve located above the boot, clean-out is difficult; it's almost impossible to avoid having feed accumulate in the boot below the auger. This old-style design also permits possibility of water seepage around the slide valve.

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amounts of corn cobs and molasses, but having only 1000 corn and using 200 of 50% protein soybean oil meal. Other workers in the past have shown the importance of readily available carbohydrate sources in urea type rations, and most feed manufacturers are careful to include molasses or other such source in their urea formulations.

Several experiments were conducted by the Kentucky group to evaluate tranquilizers in various aspects of beef production with and without various other additives. In general, the results showed that feeding of 10 mg. per head daily of trifluomeprazine did not influence daily gain or improve feed efficiency. Indeed, there are indications (nonsignificant) that this product actually resulted in depression of gains and poorer feed efficiency whether or not it was fed in the absence or presence of Terramycin or stilbestrol. Of the various in-the-feed additives, only stilbestrol produced a consistent response, bearing up both college work (Iowa, 1959) and commercial experience as to the relative efficacy of various in-the-feed additives.

On the other hand, there are indications that implants of trifluomeprazine had some beneficial effect on both daily gains and feed conversion (range of implants, 20 mg.-80 mg. per head) with the beneficial effect more pronounced at the 20 mg. level. However, the responses were not as great as similar steers receiving a 24 mg. implant of stilbestrol. It is obvious that more work needs to be done on this particular tranquilizer, especially regarding the mode of administration and possible synergistic effects with other additives.

Results with another tranquilizer, reserpine, were not particularly startling when it was added in the feed at levels varying from 1 to 8 mg. per head daily in two experiments, one a finishing type trial and the other, a wintering type.

Three years of work have now been completed at Kentucky and have been summarized as follows concerning the use of stilbestrol implants for wintering stocker steers and for steers fed grain while grazing:

"1. An implant of 24 mg. of stilbestrol improved the winter gains of both the low and high gaining groups of steers.

"2. The steers implanted in the spring alone gained faster than any group of steers on any other treatment while they were given a limited feed of corn while on grass. Some of this increased summer gain may be accounted for by less winter gain of the steers which were not implanted during the winter.

"3. A second implant of stilbestrol in the spring did not appear to increase daily gains of steers which had been wintered on a ration to produce gains of about 1 lb. daily.

"4. A second implant of stilbestrol in the spring appears necessary to maintain gains during the summer of steers which have been implanted in the fall and wintered to gain 1.5 lbs. daily.

"5. The higher level of wintering decreased summer gains by only 0.1 pound a day. The steers wintered to make the higher rate of gain were 50 lbs. heavier at the end of the summer.

"6. Seemingly more lower grading cattle were in the two groups which were implanted at the beginning of both phases. However, the overall carcass grade was not significantly lowered by reimplanting steers in the spring."

Another three year experiment was reported concerning the effect of 12 mg. (2 yrs. only) and 24 mg. stilbestrol implants and Terramycin supplement (approximately 80 mg. supplied per head daily in salt) on grazing steers. The results of the three-year project showed that the 24 mg. implant of stilbestrol increased average daily gain from 1.34 to 1.62 lb. (about 21%) in the non-Terramycin supplemented groups and in the Terramycin supplemented groups from 1.45 to 1.79 lb. (about 19%). When steers were not implanted, the use of Terramycin increased rate of gain about 8%, while with implanted ones, it improved gains about 11%. The 12 mg. level of implants was omitted from the last year's trials since the previous work had indicated the lack of consistency of responses at this level.

Rather poor results were had from creep-feeding in the hands of the Kentucky investigators. Reporting on three years' investigations, creep-fed calves gained only 0.08 lb. per head daily faster than unsupplemented ones. This small increased gain only resulted in the calves gaining an average of 13 lb. more during the season on an average of 523 lb. of creep feed. If the creep feed is valued at 2.4¢ per pound, the creep feed cost was $12.79 per head. Since the increased gain was only worth $3.25 at 25¢ per pound, the practice was obviously unsound and uneconomical.

Four experiments in which a total of 237 steers were used were reported concerning the effect of injectable tranquilizer (reserpine) on shrink in transit. Levels of reserpine ranging from 0.75 to 0.9 mg. per 100 lb. body weight were used. The steers involved in three of the experiments were hauled for a 3 hr. period, while those in the other were hauled for an 8 hr. period. In the experiments where the steers were hauled for only three hours, pounds lost in transit, pounds lost overnight, and from the time the steers were injected, slightly favored the uninjected animals. However, in the one longer haul trial, shrink was in favor of the tranquilizer group. In one of the short-haul trials, there were only one-third as many bruises in the tranquilizer group as in the controls. Otherwise, there were essentially no differences in dressing percentage, cooler shrink, or carcass grade of the experimental animals.

Aid to Drouth Area

WASHINGTON — An additional parish in Louisiana has been designated for emergency feed sales due to the drouth conditions. Ezra Taft Benson, secretary of agriculture, named Acadia parish, Louisiana, as an emergency area where farmers can buy government-owned feed grains at current support prices.

IMPROVED FEED HANDLING EASE

NEW *Live-Bottom-Action**

Butler Bulk-O-Matic tanks

**Available in both center and side draw-off models*

In new Bulk-O-Matic tanks the auger is located in the hopper itself. The action of the auger creates a live condition which keeps feed active and free-flowing. This minimizes bridging. Note, too, how slide valve is located below auger—greatly simplifying clean-out. And, with auger recessed into hopper, there is no place for water to accumulate—seepage is eliminated.

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This new Live-Bottom-Action hopper (see details at left) is a major improvement in bulk tank design. Available in both Butler standard and new Butler smooth wall tanks, this hopper offers many advantages.

Flow characteristics of high-fat feeds are improved. There is no boot . . . no place for water to seep in and cause mold. Clean-out is fast, easy and complete. Contamination problems are minimized.

This new 1960 line of Butler bulk tanks can help merchandisers of feed products two ways. First, these tanks offer improved feed handling and safer storage at no increase in price. This superior line of tanks gives you a competitive edge with your important bulk feed customers.

Secondly, these new tanks can effect substantial savings for the feed merchandiser planning bulk feed facilities of his own. Remote-controlled load-out stations can be erected and operated more economically. The new Live-Bottom-Action hopper requires smaller motors that cost less to buy, install and operate.

Get the full story on the new 1960 line of Butler Bulk-O-Matic tanks—the only tanks with Live-Bottom-Action hoppers. Contact your feed manufacturer or write direct.

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Convention Calendar

Sept. 20-21—Iowa Poultry Convention; Veterans Memorial Auditorium, Des Moines; mgr., LeRoy L. Kruskop, 535 East Lincoln Way, Ames.

Sept. 21-22 — Marketing Seminar for Feed Manufacturers; Morrison Hotel, Chicago; Sales Executives Council, American Feed Manufacturers Assn., W. E. Glennon, president, 53 W. Jackson Blvd., Chicago.

Sept. 21-23 — Pennsylvania Millers & Feed Dealers Assn.; Hotel Penn Harris, Harrisburg, Pa.; sec., Donald W. Parke, P.O. Box 329, Ephrata, Pa.

Sept. 21-23 — Feed Production School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc.; pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 22 — Minnesota Beef-Grassland Field Day; Rosemount Experiment Station, Rosemount, Minn.

Sept. 22-23 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; chm., Dr. E. L. Stephenson, Department of Animal Industry and Veterinary Science.

Sept. 28-29 — Ohio Poultry Assn.; Yough Bldg., Ohio State Fairgrounds, Columbus, Ohio; sec., Bruce R. Davisson, Poultry Dept., Ohio State University, Columbus.

Sept. 29 — Vermont Feed Dealers and Manufacturers Assn.; University of Vermont, Burlington; sec., D. C. Henderson, Hills Agricultural Science Bldg.

Sept. 29-30 — Iowa Seed Dealers Assn.; Savery Hotel, Des Moines; sec., Bob Skinner, 401 Shops Bldg., Des Moines 9.

Sept. 30 — Nebraska Feed and Nutrition Conference; University of Nebraska College of Agriculture, Lincoln; chm., Dr. John L. Adams, Poultry Husbandry Dept.

Oct. 2-4 — Poultry Industries of Louisiana, Inc.; Bellemont Motor Hotel, Baton Rouge; sec., Clyde Ingram, Knapp Hall, Louisiana State University, Baton Rouge.

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

Oct. 20-21 — Alabama Nutrition Conference; Auburn University, Auburn, Ala.; sec., Alabama Feed Assn., George R. Ingram, P.O. Drawer 500, Cullman, Ala.

1961

Jan. 23-25 — Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.; for reservations: Atlanta Convention Bureau, Rhodes-Haverty Bldg., Atlanta.

April 3-4 — National Institute of Animal Agriculture; Purdue University, Lafayette, Ind.; sec., Karl D. Butler, P.O. Box 521, First National Bank Bldg., Ithaca, N.Y.

Oct. 4-5—Washington Junior Poultry Exposition; Western Washington fairgrounds, Puyallup, Washington; W. R. Jenkins, Extension Poultry Specialist, Agricultural Extension Service, Washington State University, Pullman.

Oct. 4-6 — Northeastern Poultry Producers Council Exposition and Convention; War Memorial Auditorium, Syracuse, N.Y.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

Oct. 5-7—Texas Nutrition Conference, Texas A&M College, College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

Oct. 11-13—Virginia State Poultry Federation; Hotel Roanoke, Roanoke, Va.; sec., Paul Williams, 615 East Franklin Street, Richmond 19.

Oct. 12-13 — Association of American Feed Control Officials Annual Meeting; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Feed and Fertilizer Dept., Agricultural Experiment Station Bldg., University of Kentucky, Lexington.

Oct. 13-14 — Turkey Short Course and Jr. Market Turkey Show; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 568, Columbia.

Oct. 16-18—Kentucky Poultry Federation and Kentucky Poultry Improvement Assn.; Kentucky Hotel, Louisville; John W. Tuttle, field manager.

Oct. 16-20 — Business Management Program; sponsored by the Southeastern Poultry & Egg Assn., University of Georgia, Athens; sec., Harold E. Ford, 235 East Ponce de Leon Ave., Decatur.

Oct. 17-18—California Animal Industry Conference; Fresno Memorial Auditorium, Fresno, Cal.; co-sponsored by California Hay, Grain & Feed Dealers Assn. and University of California; chm., Bert Maxwell, Nulaid Farmers Assn., Petaluma; association office, 1400 Tenth St., Sacramento 14.

Oct. 19-21—International Symposium on Animal Nutrition; Madrid, Spain; Geo. M. Strayer, Exec. Vice

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- Easy to operate — just attach to any tractor with standard PTO, set endgate for amount per acre, and you're ready to spread.

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Load – 4 tons. Width of spread – 24 ft.
Rate of Spread – 75 lbs. per acre and up.
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CALENDAR FOR 1960-61

SEPTEMBER

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DECEMBER

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Pres., American Soybean Assn., Hudson, Iowa.

Oct. 20-21 — West Virginia Feed Dealers Assn.; Blackwater State Park, Thomas, W. Va.; J. Z. Ellison, 801 Willowdale Rd., Morgantown.

Oct. 20-21 — Cooperative G.L.F. Exchange, Inc.; stockholders annual meeting; Onondaga War Memorial Bldg., Syracuse, N.Y.

Oct. 20-21—Poultrymen's Institute; Washington State University, Pullman; W. R. Jenkins, Extension Poultry Specialist, Agricultural Extension Service.

Oct. 23-25 — Southeastern Feed Production School; University of Georgia, Athens; Harold E. Ford, Southeastern Poultry & Egg Assn., 235 East Ponce de Leon Ave., Decatur, Ga.

Oct. 25-26—Nebraska Poultry Improvement Assn.; National Guard Armory, Lincoln, Neb.; sec., Doyle H. Free, Poultry Husbandry Bldg., University of Nebraska, Lincoln.

Oct. 25-26 — Indiana State Poultry Assn.; Purdue Memorial Center, Purdue University, Lafayette; sec., Robert L. Hogue, Poultry Science Bldg., Purdue.

Oct. 27-28—National Swine Industry Conference; University of Kentucky, Lexington.

Oct. 27-28 — Washington Poultry and Hatchery Assn.; Chinook Hotel, Yakima.

Oct. 27-29—National Swine Industry Conference; University of Kentucky, Lexington, Ky.; chm., Keith Myers, Secretary, National Swine Growers Council, Box 241, Grundy Center, Iowa.

Oct. 28—Illinois Sheep Day; University of Illinois, Urbana; chm., Dr. U. S. Garrigus, Animal Science Dept.

Nov. 2-3 — Kansas Poultry Assn.; Broadview Hotel, Wichita; sec., Harry J. Reed, Box 663, Manhattan.

Nov. 2-3 — Illinois Feed Assn.-Illinois Poultry & Hatchery Federation, joint convention; Springfield, Armory, Springfield; sec., IFA, Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec., IPHF, Aubrey Harless, Shelbyville, Ill.

Nov. 3—South Dakota Swine Research Day; South Dakota State College, Brookings.

Nov. 3-4 — Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Dr. H. H. Williams, Biochemistry and Nutrition Dept., Savage Hall, Cornell University, Ithaca, N.Y.

Nov. 9-12 — National Renderers Assn.; Statler-Hilton Hotel, Dallas, Texas; sec., Miss Jamie Fox, 30 N. LaSalle St., Chicago, Ill.

Nov. 14-15 — Washington Animal Industry Conference; Skagit Valley College, Mount Vernon, Wash.; John G. Wilson, mgr., Washington State Feed Assn., 814 Second Ave. Bldg., Seattle 4.

Nov. 16-17—Missouri Poultry Improvement Assn.; Hotel Continental, Kansas City; sec., E. M. Funk, Columbia, Mo.

Nov. 16-18 — Florida Nutrition Conference; University of Florida, Gainesville; chm., Dr. J. P. Feaster, Animal Husbandry and Nutrition Dept.

Nov. 17-18 — Liquid Feed Assn.; Kansas City; Jack von Mettenheim, Princeton, Ill.

Nov. 20-22—Western Grain & Feed Assn. of Iowa; Fort Des Moines Hotel, Des Moines, Iowa; sec., Bob Skinner, 401 Shops Bldg., Des Moines 9.

Nov. 25-26 — American Society of Animal Production; Hotel Sherman, Chicago, Ill.; sec., Clair E. Terrill, Animal Husbandry Research Division, Agricultural Research Center, Beltsville, Md.

Dec. 1-2 — North Carolina Animal Nutrition Conference; North Carolina State College, Raleigh; chm., Dr. J. W. Kelly, Poultry Science Dept.; cosponsored by North Carolina Feed Manufacturers Assn., sec., McNair Evans, Box 44, Mocksville.

Dec. 6-7 — North Dakota Turkey and Egg Convention; Fargo Civic Center Auditorium, Fargo, N.D.; sec., Irving J. Mork, Fargo.

Dec. 8 — Arizona Grain and Seed Assn.; Westward Ho Hotel, Phoenix; sec., Willis F. Nielson, Box 787, Mesa, Ariz.

Dec. 12-13 — Midwest Veterinary Nutrition Conference; Continental Hotel, Kansas City; Lloyd Larson, Midwest Feed Manufacturers Assn., 20 W. 9th St. Bldg., Kansas City 5, Mo.

Dec. 13-15 — Minnesota Poultry Hatchery Assn.; Hotel Radisson, Minneapolis, Minn.; sec., L. L. Baumgartner, Litchfield, Minn.

1961

Jan. 4-6—National Turkey Federation; Conrad Hilton Hotel, Chicago, Ill.; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 12-13—Michigan Feed & Grain Dealers Assn.; Michigan State University, Kellogg Center; sec., Nevel Pearson, P.O. Box 472, East Lansing.

Jan. 15-17—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4.

Jan. 16-17—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Flemming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 23-25—Farmers Grain Dealers Assn.; Civic Memorial Auditorium, Fargo, N.D.; sec., Lloyd C. Hanson, 513 Black Bldg., Fargo.

Jan. 27 — Missouri Turkey Day; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 568, Columbia.

Jan. 31-Feb. 1 — Hoosier Turkey Trot; Purdue Memorial Union, Purdue University, Lafayette, Ind.; John N. Howell, Turkey Department, Indiana State Poultry Assn., Poultry Bldg., Purdue University.

Feb. 2-3—Oregon Animal Nutrition Conference; Withycomb Hall, Oregon State College, Corvallis.

Feb. 3-4—Minnesota Turkey Growers Assn.; Leamington Hotel, Minneapolis; sec., Roy Munson, 2200 University Ave., St. Paul, Minn.

Feb. 6-7—Montana Nutrition Conference; Montana State College, Bozeman; chm., Dr. O. O. Thomas, Animal Industry and Range Management Dept.

Feb. 7-10 — American Dehydrators Assn.; Jung Hotel, New Orleans, La.; executive vice president, Joseph Chrisman, 430 Board of Trade Bldg., Kansas City 5, Mo.

Feb. 8-9—Pacific Northwest Feed

(Turn to page 38)

Go and Grow with Ful-O-Pep!

Build for the future with Ful-O-Pep's 5-point bulk and grind-mixing program: 1. Unsurpassed experience and know-how in bulk, grind-mixing. 2. Experienced engineering help. 3. Help in arranging financing. 4. Backing of trained sales and service men. 5. Complete line of research-built farm-proved concentrates.

WRITE:
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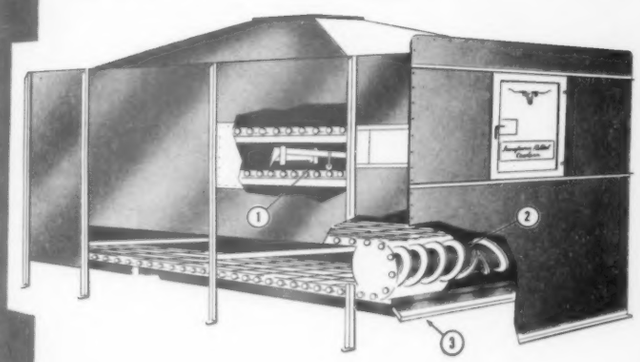
Ful-O-Pep Sales Manager, Merchandise Mart, Chicago 54, Illinois

CLEANS ITSELF 3 WAYS!



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Now! Three **exclusive** Longhorn features prevent contamination and discourage down-time from clogging while handling fatty, sweet or additive laden feeds.

1. **Belt Vibrator** on each pass dislodges fines enmeshed in the wire belt. Prevents clogging and contamination between runs of different types of pellets.
2. **Belt Clean-Out**—Screw-like assembly at cooler shaft prevents fines build-up at sprockets . . . feeds fines out both sides and onto flat bottom to be picked up by wipers.
3. **Wiper Assembly** sweeps fines from flat bottom of cooler, deposits them back on bottom belt or in fines hopper.

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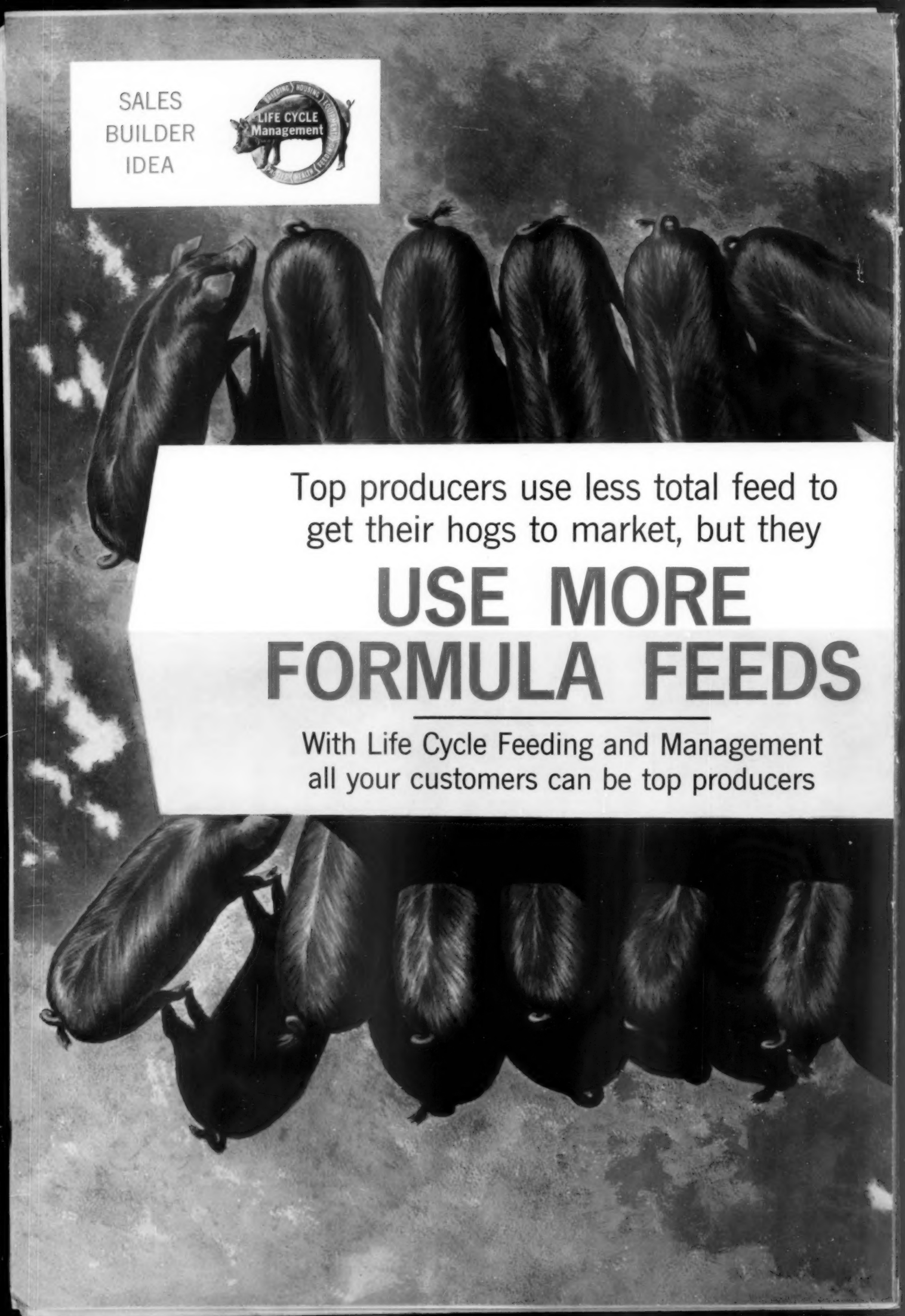
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Management
Top producers use less total feed to
get their hogs to market, but they
USE MORE
FORMULA FEEDS
With Life Cycle Feeding and Management
all your customers can be top producers

It only takes a 2% improvement in feed efficiency to help the average producer save a ton* of feed with a 10-sow herd

Use this proven benefit to help you sell your Life Cycle Feeding Program

It's an easy goal to reach. Average producers could save that much—or more—by switching to your modern Life Cycle Program

In fact, a recent survey shows top producers do far better than that—use 19% less feed than average producers to send a hog to market. But those same top producers use more formula feeds.

Feed saving is only one of the benefits you can sell when your swine feeds are built around a good Life Cycle Feeding and Management program:

- Larger litter sizes, thanks to a good breeding-herd program.
- Better weaning weights through good starter feeds that decrease early mortality and speed gains.
- Faster gains that shorten feeding time to market.
- Greater return on investment through lower costs.

That's the story Pfizer is helping you tell with the giant Life Cycle Management promotion. It sells the need to help you sell the feed.

Tie in with this program. Whether you make concentrates, supplements, or complete feeds with potent Terramycin, you can add these claims to your swine feed sales story:

Terramycin, when fed at recommended levels, is effective against:

Scours: Helps prevent and treat Scours, also known as Bacterial Diarrhea, Infectious Enteritis, Vibrio Dysentery, Necro, Black Scours, Salmonella, and Bacillary Infections associated with virus diseases.

Respiratory Diseases†: Helps treat Pneumonia, Bronchitis, Pleurisy, and bacterial complications associated with Pneumonia.

Atrophic Rhinitis: Helps maintain weight gains in the presence of this disease.

Leptospirosis: Reduces abortion rate, birth of dead or weak pigs from this disease.

Stress: Helps prevent stress setbacks† from chilling, vaccination, farrowing, castration, worming, etc.

In Starter Feeds: Helps reduce early mortality†, protects against diseases associated with stress†: helps give faster gains and better feed conversion.

†Due to Terramycin-susceptible organisms.

***How the Ton is Figured**

An average producer uses 4.3 pounds of feed per pound of gain.

A 2% saving in feed will save 17.2 pounds of feed per 200-pound market hog.

Or

2408 pounds of feed per 140 hogs.

(10 sows averaging 7 pigs marketed from 2 litters per year)

Swine Feeds with Terramycin®

Brand of oxytetracycline

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Science for the world's well-being ™

BUTTER CONSUMPTION HEADED FOR NEW LOW

WASHINGTON—Consumption per capita of butter from all sources may be headed for a new record low in 1960—to around 7.8 lb.—compared with the previous record low of 8 lb. in 1959, according to figures of the U.S. Department of Agriculture. This compares with 10.6 lb. in 1947-49 and 17 lb. in 1935-39.

In the first half of 1960, use of butter from commercial sources exceeded those of a year earlier but distribution from CCC supplies was considerably smaller.

Consumption of milk products may set a new low of 670 lb. per capita, milk equivalent, fat solids basis. In 1959 the figure was 678 lb., down 9% from the 1947-49 average.

Use of milk solids-not-fat, however, will be near a record high this year, USDA predicted.

Mill Production School; Hotel Leopold, Bellingham, Wash.; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 10 — Washington State Feed Assn., annual convention; Hotel Leopold, Bellingham, Wash.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 10-11—Poultry Fact Finding Conference; sponsored by Institute of American Poultry Industries; pres., Harold M. Williams, 59 E. Madison, Chicago 2.

Feb. 19-21—Midwest Feed Manufacturers Assn.; Hotel Muehlebach, Kansas City, Mo.; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Feb. 19-21 — Ohio Grain & Feed Dealers Assn.; Neil House, Columbus; sec., George G. Greenleaf, 5625 N. High St., P.O. Box 121, Worthington.

March 8 — Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati, Ohio; L. E. Carpenter, Executive Director, Distillers Feed Research Council, 1232 Enquirer Bldg., Cincinnati 2.

March 16-17—Oregon Feed & Seed Dealers Assn.; Sheraton - Portland Hotel, Portland; mgr., Russ Hays, 702 Lewis Bldg., Portland 4.

March 16-17 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. R. D. Creek, Poultry Husbandry Dept., University of Maryland, College Park.

March 20-24—Grain & Feed Dealers National Assn.; Washington D.C.; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

April 10-12—Poultry & Egg National Board; Sheraton Towers Hotel, Chicago, Ill.; mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3.

April 20-22—California Hay, Grain & Feed Dealers Assn.; Jack Tar Hotel, San Francisco; sec., Leo L. Johnson, Blue Anchor Bldg., 1400 10th St., Sacramento 14.

April 27-29—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson.

May 7-10—American Feed Manufacturers Assn. Convention and National Feed Show; Conrad Hilton Hotel, Chicago, Ill.; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4.

June 8-11 — Canadian Feed Manufacturers Assn.; National Convention; Manoir Richelieu, Murray Bay, Quebec; national secretary, W. N. Hendrick, 2901 Bloor St. W., Toronto 18, Ont.; for registrations, T. G. Sevigny, Room 100, 355 McGill St., Montreal 1, Quebec.

Aug. 24-26 — North Carolina Feed Manufacturers Assn.; Virginia Beach, N.C.; sec., McNair Evans, Box 44, Mocksville.

Oct. 22-24—Midwest Nutrition Conference; Hotel Muehlebach, Kansas City, Mo.; sponsored by Midwest Feed Manufacturers Assn.; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

1962

Aug. 13-18—12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

Anderson Box Co. Opens New Branch

INDIANAPOLIS, IND.—Anderson Box Co. has announced the opening of a new branch warehouse at Harrisonburg, Va.

The warehouse is located at 31 Grey Street with R. L. Halterman in charge of the branch operation. Mason Riggs has been appointed sales representative and will cover Virginia. Both men were formerly associated with the W. A. Butler Co., Harrisonburg, and are well acquainted with the poultry industry.

The Harrisonburg branch will stock and ship Anderson's line of Pullman chick boxes, egg cases and poultry boxes as well as its complete line of hatchery supplies and poultry equipment. In addition, a specialized line of sanitation supplies and pharmaceuticals for the poultry industry will be carried.

This new branch is part of the expansion program previously announced by John Holton, Anderson Box Co.'s president. The firm is building its sales and service organization through a nationwide series of branches to provide local service.

NEW STORE OPENED

TRAVELERS REST, S.C. — Mayor George Coleman snipped the ribbon Sept. 3 to mark the formal opening of Brown's Feed Store here, a new enterprise for this area. J. K. Jones, Greenville county farm agent, was in charge of a drawing for prizes.

can you identify this grain insect by its silhouette?

Chances are, you immediately said, "Rice Weevil."

Diamond Premium Brand Grain Fumigant "A" will kill it fast . . . with certainty . . . at low cost.

It's fast because it quickly forms a heavy vapor that penetrates to remotest corners, fills every air pocket, blankets every kernel of grain.

It's certain because the vapor mixture has 100% active ingredients that kill adults, larvae and eggs, from top to bottom of bin.

Costs less because less gallonage is required per bin.

Safer, too, because it is nonexplosive and has no flash point. Premium Brand Grain Fumigant "A" has no effect on viability of seed grain . . . leaves no odor on grain, no taste, no unpleasant residue.

Details on request. Diamond Alkali Company, 300 Union Commerce Building, Cleveland 14, Ohio.

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Grace urea has proved superior in keeping feed quality up, costs down. As a result, manufacturers who use this high protein supplement in their feeds have a big advantage in a highly competitive market.

Micro-Prilled Grace Urea is a compound made up of tiny round balls. It mixes readily, pours easily, and is non-clogging. *You get an even, uniform mix throughout every time.*

And, of course, you lower your costs considerably by substituting Grace Micro-Prills for high priced protein meals.

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Comfort Stressed for Laying Hens

ITHACA, N.Y.—"Keep those hens comfortable" is the latest word to poultrymen from researchers at the New York State College of Agriculture. And they have come up with an efficient way of doing it.

Poultry houses can be kept as cool as possible in the summer and as warm as possible in the winter if farmers install two simple elements —fans and inlets—in their pens, the researchers say.

C. N. Turner explained that the use of a multiple volume fan—a fan that rotates at one speed continually but is guarded by shutters that control the volume of air it moves—is one of the most efficient ways to move stale air out of poultry houses.

To move air into the houses, the researchers used Cornell slot-type inlets—one-half inch slots or openings around the top of the poultry house. When the fan moves air out, reducing the air pressure inside the poultry house, the higher outside pressure forces fresh air in.

Because the fan is operated on a thermostatic control, its volume is adjusted to compensate for outside temperature. As temperatures go up, the fan moves out more air; as temperatures go down, the fan moves out less air.

When temperatures are below 45° F., the fan moves air at the lowest of its three capacities. In this way, less cold fresh air enters the house and the body heat of the chickens is conserved, Mr. Turner noted.

Using this method, the Cornell researchers found that even when winter temperatures were at zero or below, poultry house temperatures were held around 50° with occasional dips to 40 on very cold days. On milder winter days, inside temperatures rose to 60°.

At high temperatures, the fan moves at the highest of its three capacities and moves a lot of air out of the poultry house. "In this way, more air comes in through the inlets," Mr. Turner said. In the Cornell tests, using this method, inside temperatures were held to within three degrees of outside temperatures even on the hottest summer days.

Mr. Turner explained that temperature control is very important in poultry houses. The chickens are most comfortable at around 55° F. But, since it would be too expensive to install conditioners to maintain 55° temperatures, the most poultry farmers can do is keep temperatures as close to 55° as possible in the winter and near outside temperatures in the summer.

Other findings from the Cornell study include:

Using the multiple volume fan plus the Cornell slot type inlets, temperatures throughout the poultry house did not vary more than 5° from place to place. In contrast, the researchers tested temperatures using slots only on one side of the house. Temperatures then varied from 10 to 20°.

In the tests, bird comfort and production were considered optimum even though the maximum amount of air the fan moved was only about four cubic feet of air per five pound bird a minute. Previously, scientists believed that on hot days the fan should be able to move at least 6 cubic feet of air per five pound bird a minute, the report said.

Mr. Turner now suggests that poultrymen may not need a fan with a six cubic foot capacity. "If farmers feel the birds need more comfort, the extra money might better be put into small circulating fans to stir up the air in the pens," he said.

Another advantage of the new Cornell ventilating system: temperature fluctuations occurred more gradually and didn't disturb the hens.

Annual operating costs for this ventilating system were shown by Cornell tests to be just under $270 in a building housing 10,000 laying hens. "This is among the lowest operating costs for ventilating equipment reported to date," Mr. Turner commented.

Marshall Brothers Hatchery, Ithaca, N.Y., cooperated in the poultry house ventilating study with Cornell's Department of Agricultural Engineering and the New York Farm Electrification Council.

Arkansas Poultry Firm In Expansion Program; Pays Growers Bird Fee

By Special Correspondent

DE QUEEN, ARKANSAS — The Mountaire Farms are entering into an expansion program which will increase the number of broilers processed weekly by 50%, according to W. G. McNeice, local manager and treasurer of the Mountaire Poultry Co., whose main office is located in North Little Rock.

The processing plant here at De Queen is using 200,000 birds per week, but will soon have this number increased to 300,000.

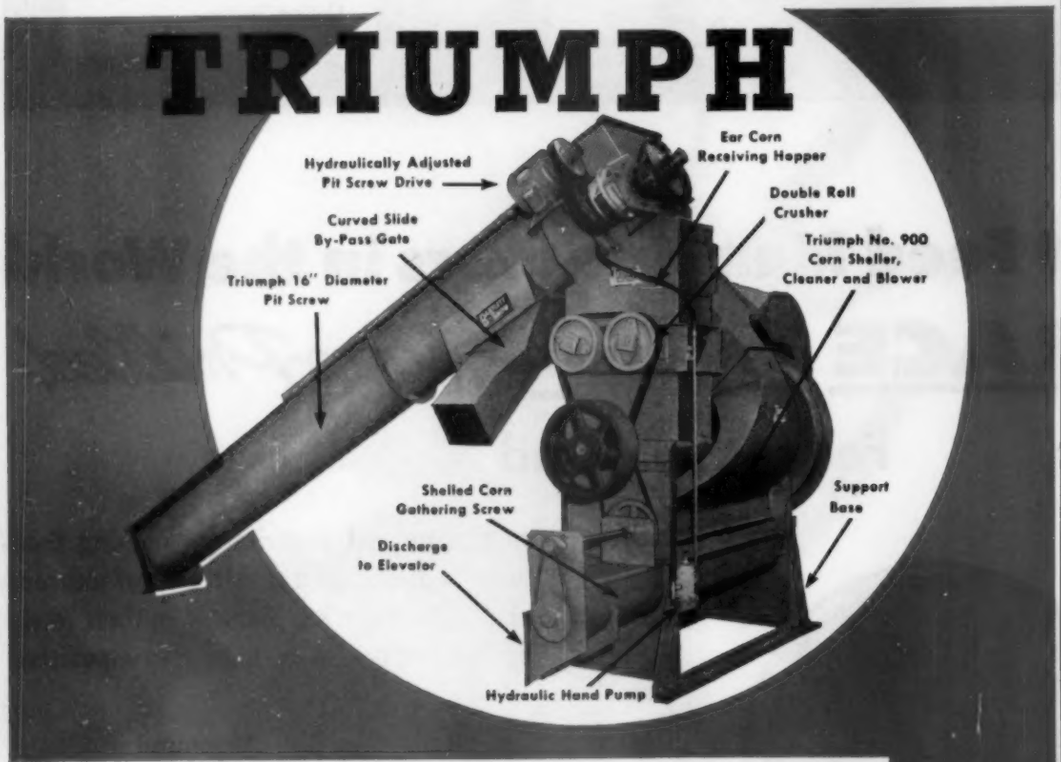
"We are using only six shifts a week now," said Mr. McNeice, "but plan to operate two shifts a day for a total of 10 per week. We will also continue to process turkeys at the plant, though there are no plans for expansion in this line."

The company has branches in several Arkansas towns. The two feed mills are at Hope and Nashville, Ark. Feed for the local farms are hauled in large trucks from Nashville, and carried to the contract growers.

The Mountaire Farms own the broilers, but most of them are being grown by farmers who already had the buildings and facilities. The firm recently leased one farm, however, and is paying the owner for the use of the house.

This is done in order to have more complete control over the management of birds, according to Mr. McNeice. Though this type of contract is relatively new to the area, several large companies are considering it. Instead of paying the farmer for managing the birds, the company handles the entire operation and pays the farm owner a certain fee for each bird grown in the poultry house.

TRIUMPH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The Triumph No. 900 Small Grains Receiving and Ear Corn Handling and Shelling System—see view above—is a complete unit, ideally suited to the requirements of grain elevators and feed mills. Completely pre-engineered. All component parts are synchronized and co-ordinated to each other to assure efficient, trouble-free operation and practically eliminate "running-in" adjustments.

No. 900 systems require little head room; only very limited floor area; and can be installed easily and quickly at low cost. Capacity to handle from 30 to 40 tons of ear corn per hour. Dimensional data sheet, prices and approximate delivery information furnished promptly.

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Egg Marketing Costs Reduced With Larger Flocks

By Dr. P. C. Clayton and Dr. F. D. Rollins
Ohio Agricultural Experiment Station

The size of farm flocks supplying eggs to assembling and grading plants is one of the factors influencing marketing costs. Until recently, most of the poultry flocks in Ohio were of similar size. For example, in 1950 over 75% of the chickens on farms were in flocks of less than 400 birds. By 1954, only 55% of the birds were in flocks of that size.

This trend toward larger flocks has continued since 1954. Today, central egg assembly and grading plants handle eggs from flocks ranging in size from several hundred to 15,000 birds.

When most of the eggs came from small flocks, plants paid all producers the same price for eggs of a similar quality. But today, with the much wider variation in flock size, producers should be paid price differentials which reflect the costs of marketing eggs from various size flocks. There is a direct relationship between the size of the flock which supplies eggs to an egg assembly and grading plant and the costs of marketing.

The cost involved in procuring eggs from one producer with 10,000 birds would be much less than the cost involved in procuring eggs from 40 different farms with 250 birds each. In purchasing eggs from the producer on a graded basis, it is necessary in the grading process to make a tally of the eggs of different quality and size grades. The time and cost involved in taking these counts on a shipment from one flock of 10,000 would be much less than the time required for 40 different producers with 250 birds each. The cost of making out settlement reports is much less for the one producer with the large flock than the 40 producers with small flocks. As a result of the greater efficiencies, many Ohio egg marketing firms are paying "premiums" to producers with the larger flocks.

How much more can the operator of an egg marketing firm pay for a large shipment than a small one? To answer the question, a study was made of the assembling and plant operations of three Ohio egg marketing firms. These firms assembled eggs from farms, graded them for size and quality and packaged and transported them to city markets.

EDITOR'S NOTE: ***A publication of the Ohio Agricultural Experiment Station at Wooster, "Ohio Farm and Home Research," is the source of this article, which discusses the variation in egg marketing costs according to flock size.***

The size of the farm shipments was found to have the greatest influence on the costs of operating farm truck routes. The average length of the egg routes studied was 185 miles and required over eleven hours to cover. An average of slightly less than three cases was picked up at each stop, indicating a large area had to be covered to assemble a load of eggs. With truck operating costs over 10¢ a mile, and drivers' wages over $2 an hour, assembling eggs from small flocks can be very expensive.

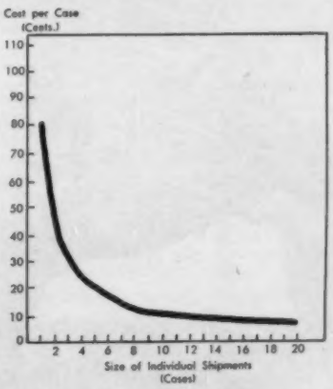
In the truck route operations studied, the cost to procure eggs when only one case was picked up per stop was 82¢ per case. When 10 cases were procured per stop, the cost was only 10¢ per case. In this example, producers shipping 10 cases could be paid a premium of 72¢ per case. The accompanying chart shows how sharply costs drop in the one to six case range, and the importance of having farm shipments of more than five or six cases.

The grading costs per case decreased as the size of the shipments increased. For example, in the grading process a "stop and start" count must be made for each shipment when the eggs are purchased on a graded basis. In grading one case shipments, this operation cost $1.10 per case but only 22¢ for five-case shipments.

The cost per case of computing settlement reports also decreased as the size of the shipments increased.

Although procurement, grading and office costs of egg grading plants decrease as the size of farm shipments increase, the amount would be different for each plant. It would depend on the size and location of the supply flocks and the handling procedures utilized within the plant.

Producers could be paid price differentials based on marketing costs influenced by the size of shipments. But, each plant would need to use its own cost data in computing these differentials. Also, it may be necessary to pay a "premium" to producers with larger flocks in order to increase the volume, which would in turn reduce the per unit cost of all sizes of farm shipments.



Relation of Size of Individual Shipments to Procurement Costs per Case

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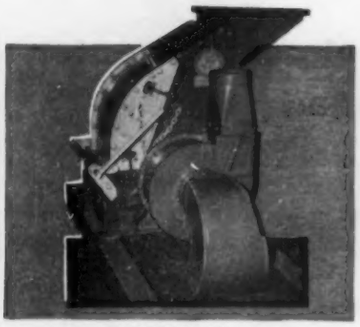
JAY BEE HAMMERMILLS



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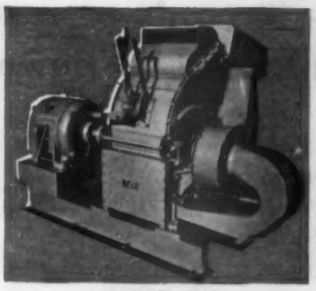

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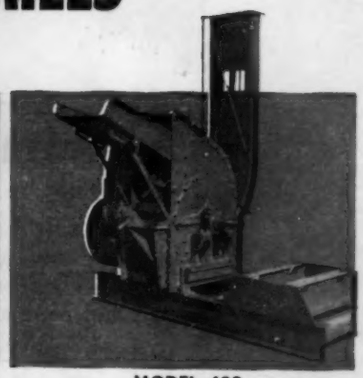

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End Air Sac in Experimental Flock

By Special Correspondent

SALISBURY, MD.—An experimental flock of chickens has been carried through seven generations without one chicken getting sick or dropping over with air sac, according to Dr. I. M. Moulthrop, in charge of the Maryland Live Stock Sanitary Service Laboratory here.

"Not one bit of medication was used to prevent air sac in the seven generations," Dr. Moulthrop said.

The secret for solving the air sac problem, according to Dr. Moulthrop, is getting baby chicks which are free from the organism that causes it. Diseased hens pass the disease organism through the egg to the baby chick, he points out, and it also spreads from bird to bird in an infected flock, particularly during the first few weeks of the chick's life.

"Disease-free flocks will stay free of air sac if ordinary good management practices are employed," said Dr. Moulthrop.

Dr. Moulthrop and his co-workers at the laboratory discovered the PPLO-free flock accidentally. Back in 1954, they set eggs from birds that had had the PPLO organism and had recovered. These chicks were brooded some distance from other flocks and care was taken not to spread PPLO to those birds.

Blood Tests Made

Blood tests made during the seven generations and cultures from the dead chicks have showed no PPLO present. Part of the birds were exposed to natural outbreaks of Newcastle and bronchitis, but no air sac developed. Others were vaccinated for Newcastle and bronchitis, but had no respiratory diseases whatsoever.

To carry the test still farther, Dr. Moulthrop exposed some birds in the experimental flock to field strains of respiratory viruses recovered in his diagnostic work. Still there was no air sac developed.

The birds came down with Newcastle or bronchitis but these diseases did not trigger the PPLO into an air sac outbreak. This has been further proof that the birds are PPLO free.

Broiler growers strive to cut down the CRD outbreaks with various medications and antibiotics either added to the feed and water or injected parenterally.

"This has not kept us in the broiler business; it has only been a crutch," the veterinarian said.

"These measures are only temporary," he said. "While these various medication methods help, they are expensive and do not get to the seat of the trouble."

"The next step in improving broiler stock could very well be making the breeders PPLO free," he noted. "But this is not an easy task.

"There is very little clean stock in the commercial field."

Whole families of chickens that make up our chick supply today would be wiped out, he said. The money and time spent in the development of these families would be a complete loss.

Perhaps one way that some PPLO-free breeders could be developed would be from birds which have recovered. This has a limitation in the number that can be produced.

Research workers also are at work on the development of vaccines, it was noted. These injected either in the breeding stock or perhaps the baby chick would build-up protective bodies to fight PPLO.

Manlift Elevator Firm Expanding

FARIBAULT, MINN. — Humphrey Elevator Co. here has purchased the manlift elevator product line of Allis-Chalmers Mfg. Co., Milwaukee.

A. B. Morris, president of Humphrey, said, "Our acquisition of the capital assets and good will of the Allis-Chalmers elevator product line includes the patterns for the Nordyke and Marmon manlifts. Spare parts for these will henceforth be made and supplied by us. The Humphrey manlift elevator will remain our prime product."

The firm has been making manlift elevators since 1887 when its original model was introduced.

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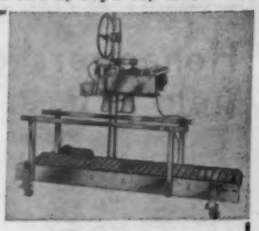

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True Morse Raps House Unit Reports

WASHINGTON — True D. Morse, acting secretary of agriculture, has criticized a report on price support and production adjustment activities by a House subcommittee as justifying "many of the obsolete and discredited program policies which are responsible for the difficulties in agriculture today, but which the subcommittee majority seems to prefer."

Mr. Morse said that he was gratified that two reports of the subcommittee on intergovernmental relations of the House Committee on Government Operations "indicated largely only differences of opinion on matters of judgment and procedure. They show no material weaknesses in program operation that result from the laws passed by Congress and which are kept in effect by Congress."

He said that U.S. Department of Agriculture audit reports and other studies have developed much of the information before, and that there is little new in the price support report.

"The report seeks to minimize the seriousness of the current situation," Mr. Morse said. "It points vaguely to some time in the distant future when demand might increase enough to take our full production potential."

He pointed up the tremendous surplus holdings in government hands and the necessity of coming to grips with the basic issues now.

He disagreed with the position that reducing price supports from high, incentive levels will not tend to reduce total production. "This is contrary to the evidence of history—and to obvious facts of the situation."

Mr. Morse stressed that "price supports without production controls will mean increased production for government storage. The objective is to adjust supports to levels which will allow production to flow into the market place, and not into government bins. Then production controls can be relaxed or removed to give farmers freedom to plan and plant as their own good judgment dictates for their operations."

The report suggests that wheat production would increase materially if controls were relaxed under a modernized program, Mr. Morse said. However, it is assumed that incentive price-support levels would be continued, and "this is not realistic," he added.

Mr. Morse stressed the need for an adjustment in support levels, "so that wheat can flow more freely into domestic and foreign markets," and also the need for greater freedom for efficient producers of wheat to plan their own production schedules.

Mr. Morse called it a "weakness of the laws" that production controls have not been effective because, in most instances, they have not been applied to a degree of full regimentation.

Mr. Morse also refuted the charge of the subcommittee that policy-making officials had not fully utilized the resources of the department of agriculture itself in studying the developing proposed farm programs, saying "I doubt if any other administration has ever received more technical guidance and help from the department's technical people."

Mr. Morse said that there is little in a subcommittee report on grain storage activities made available on June 30 to USDA "that has not been considered by Commodity Credit Corp. officials in the past, and the more important points have been subject to considerable debate in the Congress."

Cattle Numbers Above Year Ago

WASHINGTON—A total of 927,000 head of cattle and calves were on feed Sept. 1 in Arizona and California, according to the U.S. Department of Agriculture. That figure is down 3% from Aug. 1, but 19% above Sept. 1 a year earlier.

California's Sept. 1 total of 737,000 head of cattle and calves was down 2% from the 752,000 head on feed a month earlier, but 24% higher than the 596,000 on feed Sept. 1, 1959. Cattle and calves placed on feed during August totaled 130,000 head, compared with 116,000 head placed last August. Fed cattle marketed in August, 145,000 head, compares with marketings of 147,000 head during August of last year.

Cattle and calves on feed for market in Arizona Sept. 1 totaled 190,000 head, down 5% from a month earlier, but 3% above the 185,000 head on feed Sept. 1 last year. The number of cattle and calves placed on feed during August totaled 25,000 head compared with 22,000 head in August, 1959. Marketings of fed cattle in August totaled 34,000 head compared with 30,000 head the some month a year earlier.

DEALERS ENTERTAINED—Glencoe (Minn.) Mills, Inc., entertained 150 dealers and their wives at the firm's office and plant in Glencoe. Shown above is the "all-you-could-eat" chicken barbecue served at Oak Leaf Park. Later the group drove to Minneapolis to attend the Aqua Follies.

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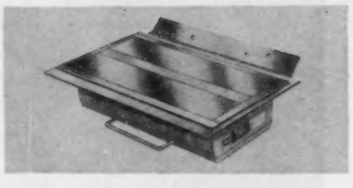

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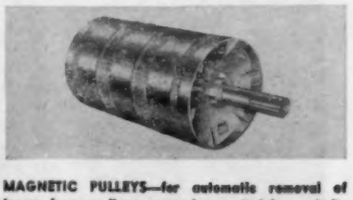

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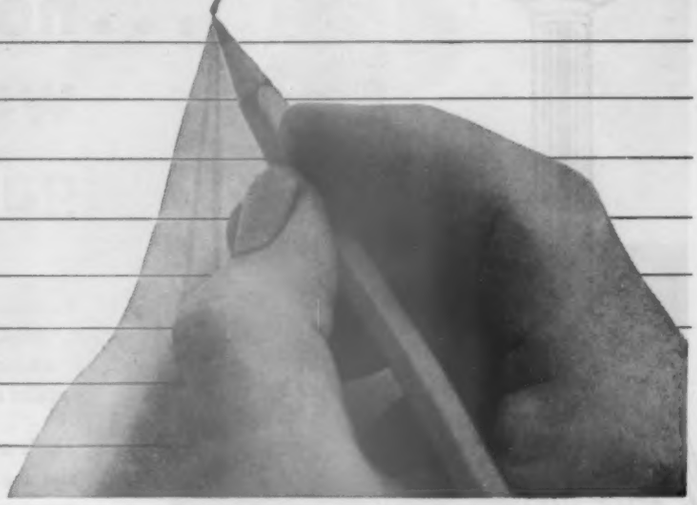

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Production Rising, Credit Falling

Poultry Industry Turns to More Internal Financing

By Dr. Robert R. Dince
University of Georgia

Steel mills are producing at 60% of capacity, car sales this year will run a little over six million instead of the seven million hoped for. Housing starts are down, and consumer appliances are moving poorly. Castro, the Congo, and Khrushchev are scaring the pants off of all of us, but the caretaker government has not ordered a full military buildup. The result of all these factors has been that money is easier and a little cheaper.

What has all this to do with feed and chickens in Georgia?

In January, I predicted that total credit allocated to the poultry industry by southern banks would fall because of the poor credit standing of the industry after a year of low or no profits and the pull of better loan opportunities outside of the poultry industry.

Despite the fact that credit to U.S. business in general has eased, poultry and feed credit has not eased. According to the figures collected by the Federal Reserve Bank of Atlanta, bank credit for broiler production has been lower every month this year except for February. From November to June, the total amount of bank credit extended in Alabama, Florida, Georgia, Louisiana, Mississippi and Tennessee has fallen $1,276 million, and, from a year ago, it has dropped $3,401 million.

When we turn to trade credit extended for broiler production, we cannot give exact dollar figures but the comparisons of the year to year changes reflect a sizable reduction in trade credit provided direct to producers, and a reduction, still sizable, but not quite as severe to feed and other dealers.

The indexes show a fall of almost 25% in total trade credit from the first half of last year to the first half of this year. These figures would show ordinarily that credit is being denied to the industry and one would expect that production would fall as a result. But as we all know, that is not even remotely the case. The figures for chicks placed show a consistent increase week by week over last year.

EDITOR'S NOTE: *The July 30 issue of Feedstuffs reported—in a story emanating from this year's Georgia Feed Assn. convention at Savannah — this observation: The poultry industry is financing itself and expanding without outside credit.*

That analysis came from Dr. Robert R. Dince, chairman, division of finance, University of Georgia College of Business Administration.

To give readers all the facts and figures behind Dr. Dince's conclusion, Feedstuffs presents here a condensed version of the talk in which he reported to the poultry and feed industries some very significant information.

Dr. Dince explains that some of the data included in his talk was an outgrowth of research done in connection with the preparation of fictionalized "business cases" materials for use in University of Georgia graduate and executive development training work.

Puzzling Situation

All of this requires some head scratching and puzzled interpretation. If poultry production is rising but credit is falling, what's happening?

The industry itself, for the first time in its history, is doing an increasing portion of its financing internally. Only the credit worthy borrowers are getting the credit and the others are being denied. This is the way it ought to be. Because it has been the need for credit and the ability to get it in such unlimited quantities without proper checking which has been the downfall of individual producers and the poultry and egg market as a whole.

You are all basking in the sun of level prices this year. The price has been high enough to return everyone a nice profit to make up for the losses of last year. Suppose that the banks opened up with a flood of credit again. What would happen to that nice 17¢ price; it would drop like a rock. I hope you have learned your lesson, that credit extended to everyone is like too much liquor.

Some Questions, Some Answers

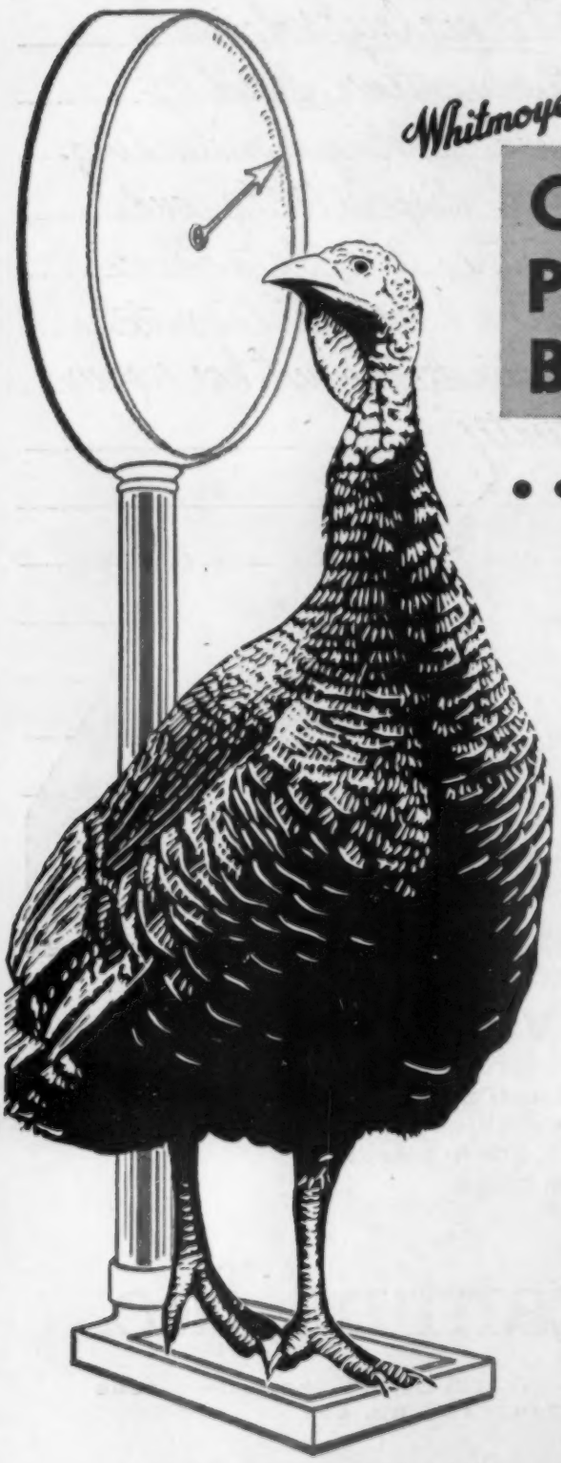
Why has this credit dried up both from the banks and the feed companies? What has caused the changeover and what does it mean for the industry?

As some of you may know, I have been engaged in a rather specialized study of certain aspects of the financing of poultry. The lessons I have learned from this study would fill a book, and I can't say too much for fear of opening old wounds and reawakening some bitter memories among some of you.

But this "one company" and its sad experience has opened the eyes of many lenders and the old siwash that "nobody ever lost a dime with a chicken pledged for collateral" has proven to be false.

I remember the experiences of one bank involved in the case that actual-

(Turn to FINANCING, page 67)



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One rat, recently returned to his cage, ran to a fellow rat and exclaimed: "You know, I've got Zilch conditioned!"

"How so?" asked his colleague.

"Well," replied the first rat, "every time I press the bar, he gives me food!"

◆ ◆ ◆

The lecturer in the village hall began his talk with, "Now you all know what a molecule is."

Interrupting him, the chairman of the meeting said, "Most of us do, but perhaps you'd better explain for the benefit of those who've never been up in one."

◆ ◆ ◆

The husband of a woman who had recently learned to drive was dismayed upon returning home and seeing the car in the living room.

"How on earth did you land our car in here?" the hubby asked.

"Nothing to it," she replied. "When I got to the kitchen I simply made a left turn."

◆ ◆ ◆

Wife: "The maid quit. She said you spoke to her insultingly over the phone."

Hubby: "Ye gad! I thought I was talking to you."

◆ ◆ ◆

Office geometry: Mistakes in office routine are equal to the sum of squares employed.

◆ ◆ ◆

The prospective buyer for a new home commented to the builder, "These walls certainly don't look very sturdy."

"Of course not," said the builder. "We haven't put on the wallpaper yet."

◆ ◆ ◆

Behind every successful man you'll find a woman who has nothing to wear.

◆ ◆ ◆

Then there was the cannibal chief who was complimented on the meal he was serving.

"Your wife makes mighty good stew," said a guest.

"She does, at that," the chief replied. "But we sure will miss her."

◆ ◆ ◆

"My husband would never chase another woman," declared the lady. "He's too fine, too decent, too old."

◆ ◆ ◆

So live that you would not be ashamed to sell the family parrot to the town gossip.

◆ ◆ ◆

Scientists are debating whether or not splitting the atom was a wise crack.

◆ ◆ ◆

A Martian landed and, while the tubes in his head glowed off and on in colored hues, he wandered into a bar. He noticed a man slipping a coin into the jukebox and was fascinated by the lights and colors of the machine.

He ambled over to the jukebox, stared at it for a moment and asked: "Now tell me, what is a nice girl like you doing in a joint like this?"

◆ ◆ ◆

Little Boy (on a transcontinental train): Mother, what's the name of the last station we stopped at?

Mother: Don't bother me now, dear, I'm reading. Why do you ask?

Little Boy: Because sister got off there.

Latest Rulings in Labor Relations

MUST EMPLOYER POST NEW JOB OPENING BEFORE HIRING ?

WHO'S THAT FELLOW!
THEY'VE EXPANDED J.C.'S DEPARTMENT
HEY, WAIT A MINUTE!
THAT JOB SHOULD BE POSTED SO I COULD BID FOR IT!
IT'S NOT A VACANCY BUT A NEW JOB!
OUR CONTRACT CALLS FOR BIDDING ON JOB VACANCIES!
NO VACANCY AS SUCH EXISTED!
ARBITRATOR'S DECISION
YES, ANY JOB OPENING IS CONSIDERED A VACANCY
Based on a 1960 Decision

THE FIRST FULLY-AUTOMATIC SINGLE CYLINDER RANGE BLOCK PRESS

75 OR 100-TON HYDRAULIC PRESSURE CAPACITY

VARIABLE 3-SPEED OPERATION MAKES 1 TO 5 PRESSINGS PER MINUTE

ANGLE DESIGN PERMITS AUTOMATIC LOADING OF MINERAL AND PROTEIN FEEDS FROM SCALE —EJECTS BLOCKS ON SAME PLANE AS PRESSED

AUTOMATICALLY EJECTS 300 MOLDED RANGE BLOCKS (8½" x 8½" x 11½") EVERY HOUR

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LANDERS BLOCK-MATIC

A design feature sure to please every owner is the simplicity and ease with which the pressed block is conveyed by gravity onto the wrapping table or conveyor belt. Synchronized automatic loading from scales permits the Block-Matic to be operated by one man, saving man-hours and labor costs. Because the Block-Matic is built of the finest quality first-line materials throughout, it offers low, low maintenance costs. Landers, of course, offers engineering, installation and parts service.

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AUTOMATIC CONTROL.. Eliminates necessity of changing feeder in the bottom when dies are changed.

CAN BE MOUNTED ON SHAKER..

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Medicated Feeds Label Designed

SACRAMENTO—To further clarify the proper labeling of medicated feeds as they pertain to the commercial feeding stuffs law of California, a new invoice attachment has been designed by Walter A. Martin, feed medication specialist, Hess & Clark, according to the California Hay, Grain & Feed Dealers Assn. Bulletin.

Mr. Martin has received word from the California Department of Agriculture stating that the form has been reviewed and that it is believed that it is "an excellent one and fully meets the California requirements."

Requirements fulfilled by the invoice attachment are: name of feed company; date; name and amount of drug; purpose, feeding directions and warnings, and name of the person to whom it was delivered.

The association publication points out that this does not alleviate the feed manufacturer of any responsibility under the Food and Drug Administration for manufacturing of a medicated feed. According to FDA any feed that contains a drug that has not been approved or any feed that contains a combination of drugs that has not been approved or any feed that contains a level of drugs that hasn't been approved is subject to seizure, even though the level of the drug may be less than that approved.

The association reported, "We feel that if your supplier will provide you with an 'invoice attachment' like the one shown or one of similar nature, you will be less likely to run afoul of state inspectors on medicated feeds as well as keeping peace with FDA."

Mr. Martin's "invoice attachment" accompanies this story.

25 grams furazolidone

INVOICE ATTACHMENT

..... (Feed Company Name) .....(Date)

MEDICATED

This feed contains 25 grams per ton of furazolidone to provide .00275% furazolidone in the ration.

To increase egg production, improve feed/egg ratio, extend egg laying period, maintain greater laying performance under stress, improve hatchability, and increase production in the early laying period when fed continuously.

FEEDING DIRECTIONS

This is a complete feed containing furazolidone (from nf-180) at the recommended level. Feed continuously as the sole feed for laying hens from the time pullets are housed for egg production.

Delivered to: .....

Carcass Class Planned For Bourbon Beef Show

HENDERSON, KY.—A special carcass class for "Bourbon Beeves" has been announced for this year's 15th Annual Bourbon Beef Show to be held at the Bourbon Stockyards, Louisville, on Nov. 2-3-4.

The steers in this new class will be placed first on foot. They will then be slaughtered under uniform conditions by The Klarer Co., and final determination of the winners will be on basis of carcass quality. The judge will be looking for heavily fleshed carcasses with uniform but not excessive fat cover, high quality in flesh and fat, and high percentage of weight in the most desirable cuts, such as loin, rib and round.

Dr. W. P. Garrigus will judge the animals alive and Dr. James D. Kemp will make the final carcass placing. Both are from the University of Kentucky.

Ten prizes will be offered totaling $275. The winning steer will get $50. The steers will be judged Oct. 30 and slaughtered Oct. 31 in order to have carcasses ready for display at the show, which opens Nov. 2. The wholesale cuts from the winning carcasses will be offered at public auction, Nov. 3.

This will afford the public an opportunity to purchase top quality Bourbon Beef steaks and roasts for their home freezers. All cattle in the show are fattened on balanced rations containing distillers dried grains or solubles, which makes them eligible to show and sell as "Bourbon Beeves."

The Bourbon Beef Show receives the major portion of its support annually from the Kentucky Distillers' Assn. to encourage the breeding and feeding of more and better cattle in Kentucky.

NEW FEED STORE OPENS

SAN ANDREAS, CAL.—The Mother Lode Feed Store here has opened a new, enlarged combination office and display room. The new store is adjacent to the Southern Pacific Railway tracks. The store is 40 by 122 ft. and is on the site of the store opened in 1948 by H. A. Fleming. It is now a branch of the Farmer's Feed Co., Stockton, but is managed by Mr. Fleming's son, Elliot.

Alabama Nutrition Conference Planned

AUBURN, ALA. — The Alabama Feed Assn.'s annual Nutrition Conference will be held at Auburn University Oct. 20-21. Dr. H. M. Scott of the University of Illinois and Dr. George K. Davis of the University of Florida will be featured speakers, according to Dr. George R. Ingram, secretary-treasurer of the association.

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- Tankage
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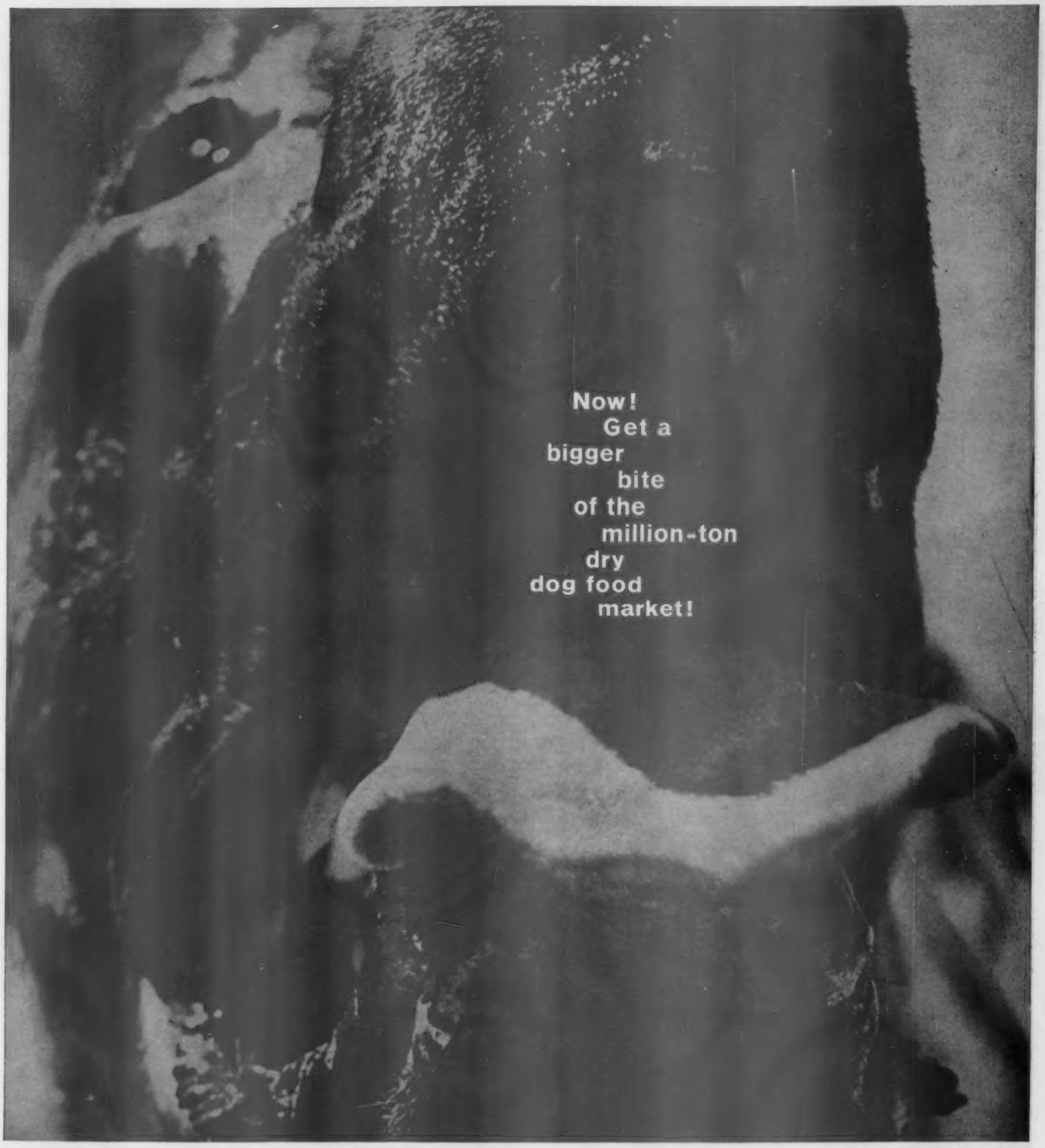

Improve your products–and your profits–with these quality dog food supplements from Borden's

The dog population of the United States is on the rise. So is dog ownership. So, indeed, are your possibilities for profit. Reason? More dogs will obviously require more food. Yet, on the emotional level, more dog owners will require added assurances of quality. To this end, Borden's research and development has produced five remarkable supplements that can help you build a better food formula more economically–and get a bigger bite of this lucrative market.

BORDEN'S MG replaces dried whey on a pound-for-pound basis. Milk and Grain sources of whey factors...condensed whey solubles and fermented corn extractives, corn distillers dried solubles and dried whole whey in a dry free-flowing form. **BORDEN'S MRB replaces dried skim milk on a pound-per-pound basis.** Milk Replacer Base–high in protein and milk nutrients. Condensed whey solubles dried on soy flakes with added soy lecithin...flour like, free-flowing and easy to mix. Also available as HI-FAT MRB with 15% added choice white grease. **BORDEN'S CASEIN replaces high-cost horse meat or meat by-products.** A highly digestible protein of high biological value, comparable to protein in meat. The protein level is 86-88%–milk protein high in the amino acid lysine. **BORDEN'S CP#3 adds palatability and lasting taste appeal.** A standardized blend of cheese scrap dried on a free-flowing carrier. Easy to handle, inexpensive. **BORDEN'S PETPRO supplements cereal-base foods.** This all-in-one supplement contains whey, fermentation factor ingredients, liver and glandular meal, fish meal, fish solubles and all the essential microingredients, plus cheese powder for palatability.

Today's best dog foods are made with Borden's quality supplements.

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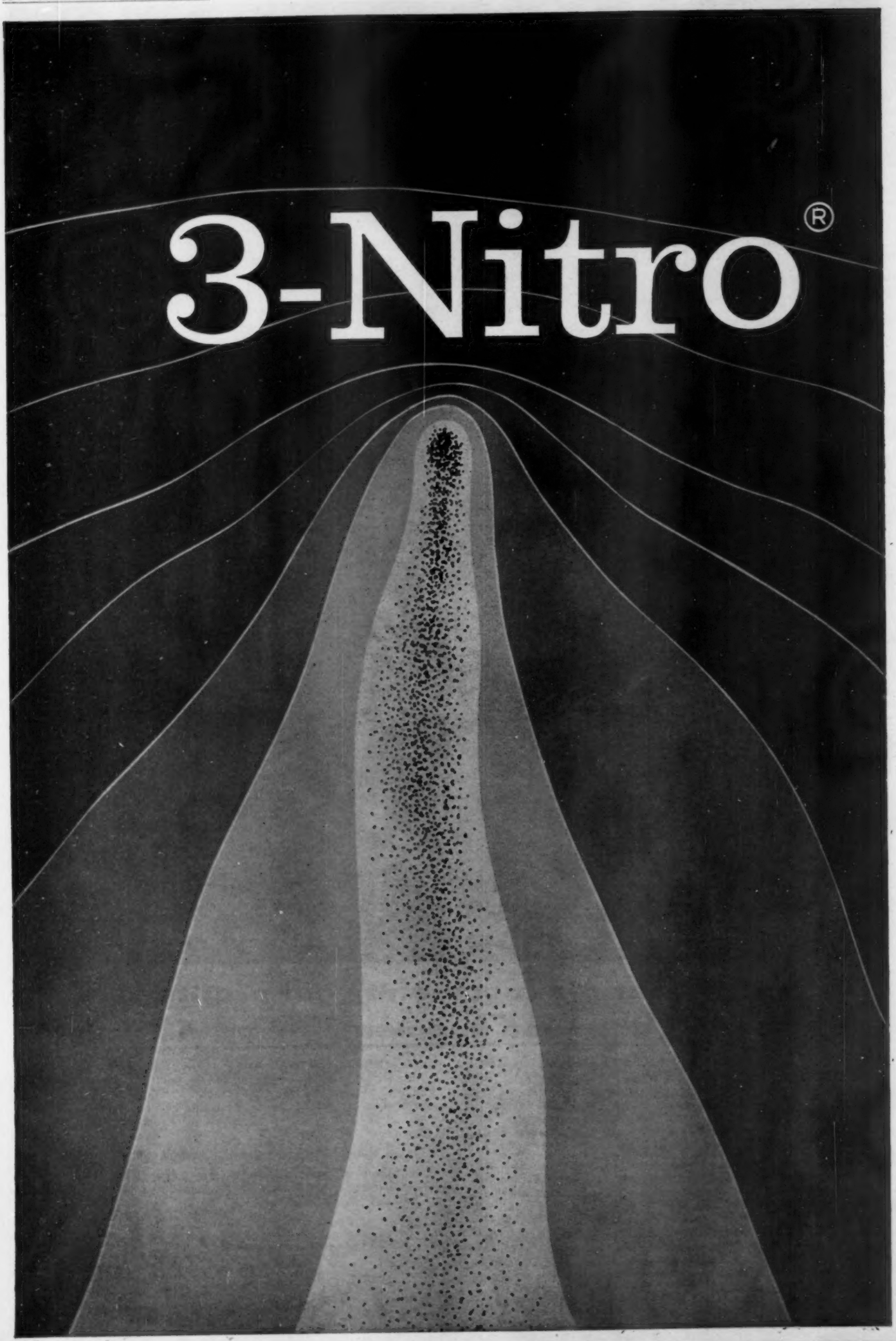
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PENETRATES EGG PRODUCTION BARRIERS!

Your egg-producing customers are searching high and low for ways to boost profits through greater flock efficiency. Many of the nation's most successful commercial egg producers have already found it—they've learned that no other single feed additive does so much to improve production efficiency as Dr. Salsbury's 3-Nitro Powder. Their records indicate that 3-Nitro-fed flocks lay up to a dozen extra eggs per hen per year—*on ¼ lb. less feed per dozen eggs*. Depletion costs have been reduced markedly as flocks show better all-around health and lower mortality. Yet all these important benefits cost only pennies per layer per year, because 3-Nitro is used at the rate of only 1 lb. per ton of an all-mash ration. No wonder poultrymen everywhere are turning to 3-Nitro! And as they use 3-Nitro, still more production barriers will be penetrated.

This increased production efficiency for your customers can mean more profit for you, too—through more repeat business. Put production-proved 3-Nitro in your egg mash. It's the feed additive of choice for layers. Also, 3-Nitro is an "old drug" that does not require special paper work for FDA clearance. Get all the facts from the Dr. Salsbury man. Write, wire, or phone today.

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Charles City Iowa

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"I can give you a carload of reasons why I stock Kasco® Dog Food!"

Best reason is "Kasco moves," says W. Clyde Osterling, owner P. J. Osterling & Sons, Inc., Butler, Pa. "In rolls a carload—and out rolls the Kasco."

"And you know, Kasco feeders are loyal as they come. Same fine folks buying Kasco for years."

Whether it's KASCO NATURAL CONCENTRATED DOG MEAL, or KASCO PROFESSIONAL DOG FOOD...it *moves!* That's because *each* of these formulas is a completely balanced diet for dogs from weaning on through the rest of their lives!

Stock KASCO yourself in both formulas and watch 'em move out. Recommend 'em to your customers. You'll find one customer inevitably leads to an other.

BEST FOODS Division of Corn Products Company

Here's the professor's advice to the feed manufacturer . . .

. . . *"I believe there is little doubt but what Feedstuffs is the business publication which would best serve your needs. This is an outstanding publication without rival within its field. I am sure it will fulfill your interest in 'ingredient market news, services available, technical information, innovations, etc.'"*

So wrote a professor of animal science at a large midwestern university in response to a letter from a Jamaican feed manufacturer asking which magazine would be most helpful in his business.

There are a lot of hard-headed businessmen in the feed industry who agree with the professor . . . nearly 14,000 of them subscribe to FEEDSTUFFS . . . because it helps them keep abreast of their fast-paced industry.

You can begin receiving your own personal copy of FEEDSTUFFS . . . your own complete source of industry news . . . 52 information-packed issues a year for only $5.

Write FEEDSTUFFS Circulation Department, 2501 Wayzata Boulevard, Minneapolis 40, Minnesota. Please include the name of your company and your department for our circulation records.

AFMA Study Shows Openings Existing For College Graduates

CHICAGO—Two-thirds of the college graduates hired last year by feed manufacturers received their training at agricultural schools, according to a survey conducted recently by the American Feed Manufacturers Assn.

The study also pointed out that agricultural colleges might provide their students with a more "rounded" education and improve their placement services to industry. Nearly half of the feed men respondents offered suggestions for improving college placement services.

The survey was conducted by sending a questionnaire to the active members of AFMA. At the same time, the Agricultural Relations Council (society of agricultural public relations practitioners) sent a similar questionnaire to its membership.

The AFMA survey shows that 45 feed manufacturers expected to employ 425 college graduates during 1960, or an average of over nine per company. These firms expect to fill 87% of the positions with graduates from agricultural colleges.

The ARC survey differed some, here. Replies to this questionnaire indicate that 35 companies will employ 1,996 graduates, or an average of 53 employees per company. Thirty-three percent will be agricultural college graduates.

The summary published by AFMA points out that while feed manufacturers intend to employ 17% fewer college graduates in 1960, as compared to 1959, agri-business firms, in general, intend to increase employment 61%.

What degrees are required? In the AFMA study, feed manufacturers stated that a bachelor degree would be required for 81% of the positions; a master or doctorate degree for 4%, and no specified degree for the remaining 15% of the positions. The greatest number of unspecified degrees were in the field of sales.

Companies were also asked what individual qualities they consider when hiring college graduates. Personal initiative and industry were mentioned most often, followed by such characteristics as native intelligence, maturity, personality, willingness to learn, morals, and honesty.

Lack Business Training

The ARC survey pointed out that the reason more agricultural graduates are not considered for business and industry positions is that they lack business training and broad education experiences along with their agricultural courses.

When asked what changes the companies would make in college training, the most frequently mentioned suggestion was that agricultural curricula include more business administration courses such as economics, business accounting, analysis and mathematics. Other suggestions included training in grammar, writing and public speaking.

Feed manufacturers also suggested graduates obtain a much more liberal background with courses in the humanities. On-the-job training prior to graduation and guest lecturers from industry were two other suggestions made.

The average of minimum starting salaries offered by feed manufacturers in 1960, according to the survey, was $4,787. In some cases, a car, operating expenses and commissions are offered in addition to salary.

Starting salaries don't vary greatly for the feed industry between different sections of the country.

In the ARC study, agribusiness companies reported starting salaries averaging between $5,000 and $5,200. The salary range in both the AFMA and the ARC studies is from $4,200 to $6,000, with many technical jobs offering the higher wages.

Another study by Frank S. Endicott, Northwestern University director of placement, indicates that the average starting salary for graduates of all colleges in 1960 is $5,496. It would appear then, according to the AFMA study, that the feed industry and agribusiness average starting salaries are slightly below the overall average.

Harris Laboratories Names Division Head

LINCOLN, NEB.—Harris Laboratories, Inc., has announced the appointment of C. Gilbert Aron as manager of its agricultural chemistry division.

C. Gilbert Aron

He was formerly employed as chief analyst with Farm Crops Processing Corp., Omaha, and more recently has been chief chemist for Lincoln Grain Exchange.

A graduate of Doane College, Mr. Aron majored in chemistry.

Positions Feed Companies Will Probably Fill With College Graduates During the Next Year:

Types	Companies reporting	Jobs available	Minimum starting salary	—Degree required— B.S. or B.A.	M.A., Ph.D. or D.V.M.	No preference	Agricultural college training preferred Yes	No	Doesn't matter
Sales and service	37	274	$4,620	218	..	56	272	..	2
Management trainees for retail stores and other pos.	6	46	4,806	46	..	..	38	..	8
Chemistry - biochemistry - nutrition	13	31	5,488	26	5	..	21	1	9
Engineers - agricultural - mechanical - civil - electrical	9	18	5,363	14	4	..	3	1	14
Advertising - sales promotion	11	14	5,099	9	..	5	10	..	4
Farm management	8	10	4,848	7	..	3	9	..	1
Technology - food & fiber	4	7	5,325	7	..	..	1	2	4
Purchasing	5	7	4,957	6	..	1	2	1	4
Personnel and public relations - education	6	6	4,900	6	..	..	4	1	1
Veterinarians	5	6	4,850	..	6	..	6	..	..
Economists	3	4	5,200	4	..	..	4	..	..
Accountants	1	2	4,800	2	..	..	..	..	2
Total	45	425	$4,787	345	15	65	370	6	49

FEED INDUSTRY OPPORTUNITIES—The AFMA recently completed a survey of its members regarding the employment of college graduates in the feed industry. Some of the information they accumulated includes the jobs that are available within the industry, training that is required and average starting salaries. The accompanying table summarizes the information gathered from 56 feed manufacturers responding to the survey.

ONE TWENTY-TON REASON SOLULAC IS ALWAYS YOUR MOST ECONOMICAL SOURCE OF UNIDENTIFIED GROWTH FACTORS

...in economical bulk carloads, 50 or 100 lb. bags, can be shipped quickly to any point in the U.S.

SOLULAC is guaranteed to be *free flowing* in whatever form you order. And there are more good reasons it will *pay* you to keep SOLULAC in your feed formulas. Because SOLULAC is a fermentation product from corn, it's *richer* in the unidentified growth factors found *exclusively* in distillers solubles and grains. In fact, SOLULAC is so important to good feed lot results that Agricultural Colleges have investigated and recommended its use.* This means your customers will get more for their nutrient dollar . . . and more value from your feed—when you use SOLULAC . . . produced 12 months a year to assure you of a continuous supply.

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CONSUMERS COOPERATIVE ASSOCIATION (CCA) Muncie, Kan.—1960
Largest in CCA operation, this MILL has a 100-ton per day capacity and can be expanded to 200 tons. Operation is all electric and ingredient handling is completely automatic. Bulk bins will handle 240 tons and attached warehouse will store 1,000 tons of bagged feed!

SANBORN CO-OP GRAIN CO., Sanborn, Iowa—1959
This completely modern 100-ton per day MILL carries a FIRE-RESISTANT rating! Unique design uses a slip form shell and pre-fabricated bolted steel plate bins. Building is expandable and includes a 100 h.p. pelleter.

BOONE VALLEY CO-OP ASSOC., Eagle Grove, Iowa 1958 & 1960
This MILL, with structural steel frame and corrugated galvanized iron cover, has a unique grated floor to allow all dust to settle on the main floor. Features include 1,120 tons of ingredient storage and two 60 foot truck scales. Bulk tanks for 240 tons of finished feed, conveyed to trucks or bagger, were added this year.

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Current FDA Policies on Veterinary Drugs Outlined

DENVER—Comments on the food additives amendment and the Delaney clause as they relate to feeds were a major part of a talk by a Food and Drug Administration official at the annual meeting here of the American Veterinary Medical Assn.

The speaker, J. Kenneth Kirk, assistant to the FDA commissioner, outlined FDA policy and views on several aspects of federal control which are of importance to the feed industry.

His discussion of provisions of the food additives amendment dealt with such things as food additive regulations as related to other FDA regulations, Delaney clause problems, effects on research, withdrawal period for certain medicated feeds and experimental animals.

Mr. Kirk cautioned that widespread disregard of withdrawal requirements for medicated feeds could result in elimination of authorization to use certain additives.

Following are excerpts from Mr. Kirk's address to the veterinary group:

"I think it came as a surprise to some groups represented here to learn that the Food Additives Amendment applies to substances added to animal feed. This, however, goes back to the basic definition of 'food' in the 1938 act which defines this term in part as articles used for food or drink for man or other animals and articles used for components of any such article. Thus, when a product meeting the definition of food additive is incorporated into animal feeds, whether this be for growth promotion, disease prevention, treatment of disease or for other purposes, the provisions of the Food Additive Amendment must be met. Actually, I doubt that this application of the law would have been the subject of a great deal of concern, were it not for the so-called Delaney clause in the Food Additives Amendment which specifically prohibits the issuance of any food additive regulation authorizing the use of an ingredient which has been shown to cause cancer on ingestion by man or animal or has been shown to cause cancer by other tests appropriate for the evaluation of food additives.

FDA Favors It

"This clause has been debated pro and con most extensively. This department is clearly on record as being in favor of it, although we do hope for an amendment that will authorize us to take steps which will get rid of the inequities we now have where those who have prior authorization by way of new drug applications can continue to add a product like diethylstilbestrol to their feed, whereas their competitors cannot now get such authorization. Secretary Flemming has recommended to the Congress that the Delaney clause be modified so that it will not be applicable in the case of animal feed where there is evidence to demonstrate that the additive does not cause cancer in the animal and is not present in the edible products of the animal at the time of slaughter. Until the law is changed, however, we just have no choice but to enforce it as was announced in our policy statement of May, 1959.

"Perhaps more surprising to some of the members of this group was a realization that some therapeutic agents are to be classed as food additives, or at least need to be investigated to determine whether or not they are food additives. If a drug is given to a food producing animal, the edible portions are classed as adulterated if that drug or its metabolites which are not generally recognized as safe or are not subject to prior sanction remain in or on those edible portions such as milk or meat. This would be legalized by an appropriate food additive regulation.

"It must be remembered that, under the law, we cannot take action to authorize a product for one use, when that would then result in violation under another section of the statute. Thus, where we conclude that there is a food additive problem involved, we are unable to make new drug applications or antibiotic form 10's effective unless and until the food additive feature is dealt with at the same time.

Effect on Research

"We are told that this policy is serving to stifle research in the field of therapeutic agents for animals and in the field of medicated feeds. This is on the basis of the claim that the economics of such a situation prevent manufacturers from going beyond the development of the product and field tests to determine whether it is effective for the purpose intended.

"We, of course, recognize that right of any manufacturer to decide how much research he wants to engage in, but we do not recognize that the cost of finding out whether residues of such substances remain in our food supply, and, if so, whether they present a hazard to health, can be a factor in our evaluation.

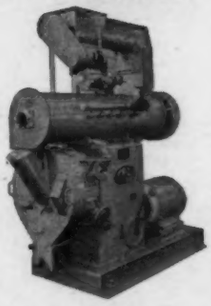
"We have questioned whether this requirement, or the Delaney clause, for that matter, has resulted in a great decrease in research, although we recognize that as the Delaney clause now stands, it would not appear wise to conduct research on a proposed feed additive which is known to produce cancer on ingestion.

"A drug which might be used right

(Turn to page 59)

Check the CPM "DUAL-SPEED" MODEL

. . . the rugged 100 HP California Pellet Mill that uses a single speed 1800 RPM motor to achieve dual-speed operation. Designed with gear shift for applications requiring both low and high die speeds to produce maximum capacities on all sizes of pellets.



This is just one of California's complete line of pellet mills. Other models with capacities from 1 to 15 tons per hour. Write for complete information, or ask for your CPM representative to call.

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...EFFECTIVE as a low-level, full-life, growth stimulant . . . from first day of life until the bird is marketed!

...STIMULATES feed performance . . . significantly improves both growth and feed conversion!

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...NO WITHDRAWAL PERIOD . . . can be fed continuously from one day of age to marketing!

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GALLIMYCIN COSTS MORE BUT RESULTS ARE GREATER!

A 9-week floor pen test at the University of Arkansas, adding 5-gms. GALLIMYCIN per ton of feed produced these results . . .

190 lbs. extra weight per 1,000 birds on 51.4 lbs. less feed per 1,000 birds

Using a broiler market price of 18¢ and a feed cost of 4¢ per lb., (plus the extra cost of the antibiotic) . . . GALLIMYCIN produced . . .

$35.45 extra profit per 1,000 birds

The true measure of any antibiotic feed additive is not its initial cost, but what it returns in actual feed performance!

It takes less than 1% improvement in growth to more than pay for GALLIMYCIN at the 5-gram level recommended for optimum economic returns!

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COMBINATIONS . . . GALLIMYCIN can be used in combination with low levels of penicillin, bacitracin, streptomycin, oxytetracycline and chlortetracycline, as animal feeding supplements for growth promotion. And you can use GALLIMYCIN in combination with certain chemical additives which are not new drugs, such as furazolidone, sulfaquinoxaline, nitrophenide and nitrofurozone.

Further clearances for GALLIMYCIN in combination with other additives (including popular coccidiostats) are in work.

TECHNICAL INFORMATION . . . for more complete information and full details on all clinical and experimental results, Abbott has a new 12-page bulletin on "GALLIMYCIN-10 for Chick Growth". Write for Abbott Technical Bulletin No. 560.

ABBOTT LABORATORIES

CHEMICAL MARKETING DIVISION

NORTH CHICAGO • MONTREAL

up to the time of slaughter may call for a withdrawal period to insure no residue of that drug in the edible parts of that animal. In such a case, a food additive regulation is called for. Another application would be the treatment of a producing cow with an antibiotic where we have a tolerance of zero for residues for the antibiotic in the milk. This would be met by a caution in the labeling which warns that the milk is not to be marketed as food for a specified period after treatment. I assume that many of you are familiar with our program and the surveys on milk for the presence of antibiotic and pesticide residues. I should add that, particularly in the field of antibiotic residues, we have been very pleased with the improvement shown during the past several months as demonstrated by the results of examination not only by governmental agencies but also by industry laboratories as well.

"In the pesticide chemical field, labels are required to be registered with the department of agriculture and before such registration is granted, that department evaluates the directions for use to see that, if followed, these directions will result in the production of crops which do not carry illegal residues. In the field of medicated feeds and in some animal therapeutic agents, we have a comparable provision in that directions for use often call for withdrawal periods prior to slaughter just as with milk which must be discarded after treatment of the cows with potent drugs. We can only urge that all who use these various additive preparations read and follow these restrictive directions so that there will be no case where the milk or meat is found to carry residues which make the product illegal. We think the veterinarians of this country can assist us in the necessary educational work along these lines, and we sincerely hope that you people will do so.

"We believe it must be kept in mind that if we authorize the use of a feed additive, for example, which calls for a 48-hour withdrawal period prior to slaughter, and then we find that there is widespread disregard of this direction, we must do more than merely deal with the illegal meat products which result from such a practice. We believe we must re-evaluate the original authorization because certainly there is no point in keeping a regulation which is not being met; the alternative is to change the regulation to eliminate the authorization to use the specific additive.

Experimental Work

"Since we have here a number of research people, particular mention should be made of experimental use on food-producing animals of various drugs or other items which are classed as food additives. We have issued a regulation under the Food Additive Amendment which authorizes the interstate shipment of new food additives for investigational use provided these are clearly labeled to show that they are for such experimental use by qualified experts and not for human food or food other than for laboratory animals. This means that, for example, if the experimental use is with cattle, at the conclusion of the experiment those cattle are not suitable to be sent to the slaughter house, since to do so would not be in conformity with the authorization for getting the new food additive in the first place. We realize that it may be possible to demonstrate that, after a specific period of time, none of the food additive remains in the edible portions of the animal. In such a case it could, in our opinion, be suitable to remove that particular animal from the category of a 'laboratory' animal at such time, but good scientific evidence showing no residue must be available before any such decision can be made.

"We think this Food Additive Amendment is workable; we realize there have been many problems needing solution and that so far some of them have not as yet been completely solved. If there is, however, a recognition on the part of all concerned that this is a law not only for the protection of the consumer but one which will also in the long run benefit legitimate producers, and if we can all work together to solve the problems which arise, we will have sound authorizing regulations. Then, the objectives of this law will be well on their way to being met."

Cottonseed Oil Study

MEMPHIS, TENN.—The staff of the National Cottonseed Products Assn., Inc., at the request of the marketing research subcommittee, is developing plans for a comprehensive survey of the current and potential market for cottonseed oil.

The study is being designed to provide needed data on current and potential consumer uses, competitive forces operating or potentially active in each use, quality position of cottonseed oil in each use, and the promotion potential that may exist for each use.

July Condemnation Figures Reported

WASHINGTON — Post-mortem condemnations of poultry slaughtered under federal inspection and poultry used in canning and other processed foods totaled 8,968,000 lb. during July, the U.S. Department of Agriculture reports.

Mature chickens had the largest percentage of condemnations by classes of quantities inspected at 2.66%. Young chickens followed with 1.84%, followed by ducks, 1.57%; old turkeys 1.34%; fryer-roaster turkeys, 1.15%, and young turkeys, 0.95%.

Ante-mortem condemnations totaled 1,494,000 lb. (live weight) for all classes. Condemnations, by classes, were equivalent to the following percentages of the live pounds inspected: Young chickens, 0.28%; mature chickens, 0.36%; young turkeys, 0.14%; old turkeys, 0.19%; fryer-roaster turkeys, 0.15%, and ducks, 0.07%.

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The Challenge of Obsolescence

"Modernization (1) must be considered by progressive management, (2) is an inherent part of any business, (3) should evolve constantly rather than intermittently, (4) demands a thorough study for best results, and (5) cannot be neglected without risk of business failure."

By Paul Berg
Professional Engineer

Copyright 1960, Paul Berg

Perpetual youth has been man's quest through the ages. Likewise, and especially in this industrial age, man seeks a similar goal—the perpetuation of adequacy in production facilities. This quest can be satisfied by a sound modernization program.

The process of keeping a plant up-to-date is an extremely important business function; it should start the day the new plant goes into operation. Over a period of thirty years its capital outlay can easily equal the original investment.

It must be realized that the insidious, hidden process of declining adequacy must be met by thought, plan and a portion of the profits. Companies which are immature because of rapid growth or which were born of some unusual business trend, or which simply lack sound business policies are particularly vulnerable to obsolescence. Funds set aside for depreciation do not alone provide for over-all obsolescence.

Modernization has been defined in a number of different ways, but one very basic definition states that modernization is anything that improves the competitive position of a company. Usually this entails operational changes to incorporate up-to-date manufacturing practices. The end result is improved use of investment and personnel. Modernization is included as part of a progressive management's long range planning.

Advanced civilization's concept of progress is highly responsible for the need to modernize. The rising standard of living demands increasing quantities of an ever-wider variety of products at ever-lower costs, making necessary a constant search for new and improved methods of manufacture. Problems are posed by increased manufacturing costs and inflationary trends.

Within the feed industry, the shift of feed production to a closer relationship with the farmer has demanded adjustments that are resulting in modernization. Constant nutritional developments, particularly of micro-ingredients, have placed great stress upon plant accuracy and flexibility, thus requiring operating modifications. New technical knowledge must be constantly transferred to industrial practices to keep industry advancing.

In the future, modernization must continue to meet the challenge created by product developments and changing customer demands. In addition, it must compensate for the relative shrinkage of the work force in proportion to the growing numbers of non-productive children and oldsters, as indicated by the recent census.

National surveys and statistics from McGraw-Hill Publications and others have shown that in the past decade wages have increased at twice the rate of output per man hour. At the same time the obsolescence of equipment has continued at an accelerated rate. Based on figures from other industries, it is conceivable that 30% of the feed industry's equipment is presently obsolete and it would not be surprising if the percentage is higher. This year (1960) it is expected that all industries will spend $15 billion on capital improvements. Of this figure, it is estimated that 60% will be for modernization and the balance for expansion. In this modernization budget 75% has been set apart for equipment and the balance of 25% for buildings.

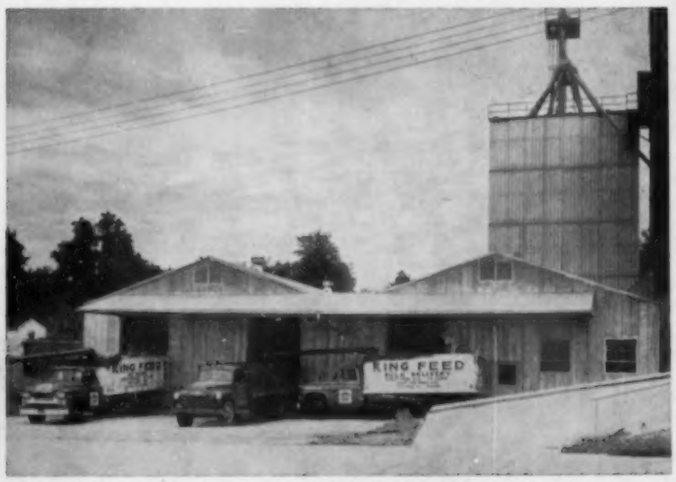
Paul O. Berg

AUTHOR—Paul O. Berg, Ft. Wayne, Ind., is a professional engineer who has specialized in consulting and designing for the feed and grain industries. Mr. Berg has designed more than 40 feed plants in this country and foreign countries. Much of his services cover remodeling old feed mills as well as designing new ones. Mr. Berg was elected state secretary this year of the Indiana Society of Professional Engineers, an affiliate of the National Society, which includes engineers qualified to practice engineering by state registration. Much of the material that forms this article was the basis for a talk given by Mr. Berg at the Indiana Grain & Feed Dealers Assn. convention.

OBJECTIVES—Modernization can be expected to accomplish a number of different objectives that will result in a more competitive position. It can reduce expenses, improve raw and finished materials, improve methods, improve customer relations, improve relations with suppliers, or add operations.

Reduced Expenses: Modernization may entail consolidated operations, automation, protective devices, remote controls, increased flexibility and added bulk handling facilities. Modernization may be an efficiency measure directed toward conservation of power, fuel and other utilities. All of these contribute to reduced expenses through better use of labor, utilities, and equipment.

Improved Raw and Finished Materials: Raw material purchase price savings may be obtained by providing means to upgrade raw materials. For example, grinding can control material particle size and drying can im-



MODERNIZATION—Here is one example of a modernization project. The M. D. King Milling Co., Pittsfield, Ill., installed a modern feed manufacturing facility in an old flour building (at the right edge of the picture), with warehouse and bulk bins added. Paul Berg, the author of the accompanying article, was the consulting and designing engineer on the project.

NEW PLANT—Pictured above is the new feed plant of Zip Feed Mills, Sioux Falls, S.D. This is a new concrete building, with modern feed manufacturing machinery, next to an existing mill.

BULK FACILITIES—New bulk finished feed storage facilities were added alongside an existing feed plant of Allied Mills, Inc.

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ADDITIVE PROBLEMS—A joint meeting to discuss feed additive problems was held recently in Chicago by committees of American Feed Manufacturers Assn. and the Animal Health Institute. Shown, left to right, around the table are: Leroy Schilt, Ralston Purina Co.; Dr. Russel A. Rasmussen, Peter Hand Foundation; Bertram H. Lebeis, American Cyanamid Co.; Hollis Brower, Dow Chemical Co.; Ray Barron, American Cyanamid Co.; J. M. Young, Merck & Co.; Dr. E. J. Matson, Abbott Laboratories; W. E. Glennon, AFMA; Dr. Frederick Coulston, Sterwin Chemicals Inc.; D. H. Bruner, Animal Health Institute; Dean McNeal, The Pillsbury Co.; Robert W. Nichols, Abbott Laboratories; Dr. S. F. Kern, Eli Lilly & Co.; Lee Boyd, AFMA; Dr. Kathel B. Kerr, Dr. Salsbury's Laboratories; Dr. W. W. Cravens, McMillen Feed Mills; E. D. Griffin, Allied Mills, Inc.; J. T. Redwine, The Quaker Oats Co.; W. T. Diamond, AFMA; Dr. A. L. Andrews, Hess & Clark, Inc., and (standing) Dr. Walter Glista, Wirthmore Feeds, Inc.

prove moisture content. Such operations provide for better storing characteristics and better material flow. Upgrading the finished feeds by reducing contamination, improving the removal of foreign materials, reducing breakage and reducing particle separation and segregation result in a more attractive product. More accurate formulation and mixing contribute to product quality and dependability.

Improved Methods: Reduction of downtime and non-productive labor is possible through rearrangement of the equipment, coordination between operations, maintenance simplification, improved equipment designs and new construction materials.

Improved Customer Relations: Modernization contributes to prompt handling of customer's orders and less imposition upon the customer's time. Poor service has driven many a farmer to a competitor's door.

Improved Supplier Relations: Plants should be equipped to promptly receive supplier's ingredients. For example, truck drivers who bring in raw materials on backhauls can be discouraged from coming to the plant if poor handling is provided for their trucks.

Added Operations: Meeting a trend by new product integration most often is an incentive to new business levels. These objectives may be apparent from casual observation, but the degree of improvement can best be evaluated by a thorough study.

PROCEDURES—The proper modernization procedure falls into four steps:

1. An analysis to determine the needs.

2. Weighing one need against another.

3. Scheduling the work.

4. Implementing the program by entering into construction.

Analysis: This is basically an economic study supported by technical knowledge. The purpose of the study is to determine where modernization is economically and operationally sound and feasible and how it may be accomplished.

Before entering into a study, management should very clearly analyze the future course of the business, available capital resources, timing, etc. These considerations can aid in directing the efforts of the study to a conclusion that will answer management's questions, reducing the possibility that the survey may become a mere summary of present operations.

A number of check points useful for guidance in the study may be listed as follows:

(a) Bottlenecks removed.

(b) Places to upgrade raw materials.

(c) More dependable material handling and storage.

(d) Improved community relations.

(e) Inclusion of latest manufacturing methods.

(f) Compliance with latest codes and legal requirements.

(g) Meeting the latest final product specifications.

(h) Improved employee relationships.

Many companies face a problem in the lack of qualified personnel necessary to make a meaningful study. Management should seek someone who can objectively examine all phases of the operation, competent to grasp the entire operation and yet be fully aware of all the details.

Weighing the Factors: A study will highlight areas in the plant that need the greatest attention. This information will help determine in which areas modernization will provide the greatest return for the investment dollar. A study can determine the point of modernization beyond which only diminishing returns may be expected. It can weigh the conflicting demands for capital such as plant operations versus financing the finished product at the consumer level.

A study can help management evaluate existing assets for comparison with new facilities that may be duplicated in plant expansion. These can include such things as property, railroad sidings, warehouse space, storage bins, roads, office space, and miscellaneous service items. The property may possess additional value by being in a desirable location difficult to duplicate.

Some modernization factors considered by a study are not easily measured in dollars and cents. Improved working practices make for better employee relations, which can improve labor availability and quality. Modernization possesses considerable intangible value in impressing upon the customer the company's progressive attitude. Many companies have exploited this factor by encouraging their customers to visit the plant with its modern facilities. This inspection inspires confidence which holds old customers and entices new ones.

Scheduling: Modernization should be carried on by a long-range program. This approach assures that all aspects can be considered in their proper perspective. Otherwise, neglect can continue until the cost for modernization becomes completely beyond the capacity of a company's pocketbook. Long-range planning and scheduling can place a time limit on different steps of modernization, assuring that the program will be followed. It arranges for other expenditures to be correlated with modernization expenses. It assists in apprehending small details which, by being overlooked, could upset the economic applecart of the entire scheme.

Obsolescence is constantly occurring, but in different degrees in different phases of the business; planning must be flexible to accommodate this situation.

Scheduling recognizes that modernization should be accomplished during the low period of the business cycle. During the slack production time there are fewer plant operation interruptions and plant personnel are available for labor. One common reaction among management is that when business is good they are too busy to do modernizing work; when business is bad, they cannot afford it. They should be willing to accept the gamble that the business cycle will repeat itself.

A very comprehensive look at the entire business picture should be taken near the fifteenth year of plant operation. By this time considerable depreciation has occurred, operating and maintenance costs have become greatly influenced by the age of the equipment, technical progress has occurred, and a business drift may have taken place that justifies a completely new look at the business.

Implementation: The final phase of the modernization step is to put the plan into action. If the step is to involve construction, detailed plans and specifications will provide the mechanism to proceed with assurance that management's decisions are respected. In addition, with properly engineered planning the most competitive arrangement can be found to build to the budget that has been allowed. All of this comes within the scope of a consulting engineer who by experience has the know-how to arrive at the lowest cost end result.

EXAMPLES—Let us consider some of the possibilities for modernizing a feed mill.

The steam generator may be obsolete. Fuel costs and labor attendance costs can be excessive in an old boiler. A new boiler can often pay for itself in a little over a year. In addition, ample steam capacity not only saves considerable time in liquid handling and improves liquid distribution into the feed but it increases the pelleting capacity as well. An inspection of the steam distribution system may reveal losses, such as those caused by lack of insulation, that can be recaptured with a small expenditure.

A fast, safe, dependable way to get a workman to the different floors to properly operate the equipment can save great labor. An overflowing bin, a backlegged bucket elevator, a piece of equipment damaged because an operator was unable to attend to it in time—a few such incidents can waste more than the modest price of a new manlift.

Cyclone dust collectors are much less efficient than filter type collectors. In one mill a 2% loss of $45 per ton material over eleven months equalled the cost of a filter collector. The field of dust collection holds many possibilities for savings through modernization.

A remote screen changer on a hammermill provides savings in labor and adds to the production time. One mill claimed the screen changer savings were equal to the value of one workman's time and in another mill grinding receipts were increased from $1,800 to $8,800 per year due to the increased capacity resulting from recaptured production time.

A separately driven hammermill fan will increase the grinding capacity possibly 50% with a 25% increase in the investment.

Grain shipping scales are a dual source of great loss to the country elevator. The first loss occurs in a sluggish and worn scale that does not cut off quickly, allowing extra grain to go through unrecorded. The second loss occurs in transit, resulting in the outturn weight being less than that shown shipped. A grain scale that is worn and erratic provides the shipper with no defense. The situation is so prevalent that settlements of less than 100% are the rule rather than the exception.

The automatic mixing control panel is an interesting recent addition to feed milling practice. Where capacity justifies, it is an economically sound investment. Panels can be secured with a number of different degrees of automation, thus giving some choice of the expenditure.

In the electrical distribution system lies opportunities for modernization. Overloaded switches are the source of constant irritation and are dangerous. Overloaded wiring is also dangerous. Modern switchgear is dependable and can solve the problem of inadequacy. The addition of capacitors in the electrical circuits will improve the power factor and also will reduce the wattless current, thus providing more available power at the motor. Under some schedules the addition of capacitors will reduce the power factor penalty, which will reduce the power bill.

Inadequate storage bins and flat storage space are deterrents to plant efficiency. On the other hand, new storage represents a sizable investment and an excess of storage is a waste of capital. A careful analysis of plant requirements should be made before undertaking such a major building program.

Insurance costs can be reduced by such things as fire doors, sprinklers, and other fire prevention items; modernization has excellent application in this area.

This discussion has covered only a few modernization applications; there are many more. Modernization can easily save $1.50 per ton in operating costs alone; $5 to $6 per ton is possible in some cases. Modernization should be planned early in a plant's life and should be a constant program. Those areas promising outstanding returns deserve the most attention and should be implemented first.

FINANCING — Shortage of funds has been a restraining factor for many a sound modernization program. There are a variety of sources of the necessary capital — company funds, borrowed funds, leased rent and combinations of these three types.

First of all, a well documented, logical, clearly-written survey is a helpful instrument when seeking outside financing; in some cases it determines the success of the request.

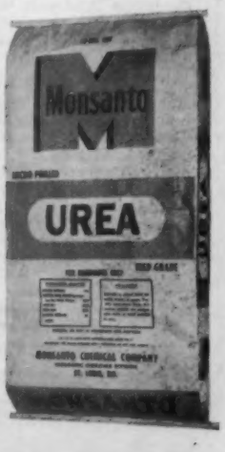
The first source for funds any company should consider is the local bank. Banks are not as interested in the long-term financing usually required for modernization as they are in short-term loans, but it is possible that at least part of the funds may be available from the local banking facilities.

The Small Business Administration is another source of capital. SBA is known for very slow, deliberate procedures; considerable time must be allowed for it to process a loan. The maximum interest rate charged by SBA is 6%, compared to the 5¾ to 7% interest commonly charged by local banks. SBA may supply the money directly or it may work through the local bank.

For companies who have extended their borrowing to the limit and must turn to some other form of financing, the leasing arrangement is a possibility. It has become more prevalent in the last few years and

for best dispersion in your ruminant feeds! New Monsanto feed-grade urea offers you these double-barreled advantages: 1. Monsanto Urea comes in coated micro-prills that help prevent caking, clogging, dusting. 2. Because Monsanto micro-prills are the smallest known today, you get a free-flowing, compatible urea that mixes easily, distributes uniformly. May we send you samples and complete technical data on this new economical protein extender for ruminant feeds? *Just write or call* MONSANTO CHEMICAL COMPANY, Inorganic Chemicals Division, St. Louis 66, Missouri. *Monsanto also supplies* Santoquin® antioxidant, MHA® (Methionine Hydroxy Analogue protein supplement), phosphoric acid, monosodium phosphate, dicalcium phosphate, tricalcium phosphate, and sodium metabisulfite.

Here's how Monsanto's new, smaller urea micro-prills distribute evenly throughout the feed . . . deliver top performance.



in certain instances it has considerable value.

Some items, such as autos, trucks, barges or hopper-bottom cars can be leased at slightly over actual cost. Certain other items, however, may be very expensive to lease, thereby dictating the necessity of a high return on the investment. For example, if leased rent is used for a five-year period, the entire value of the lease must be paid to the leasor during that five years. In addition, a minimum of 5% interest must be paid. The payments will therefore run about 25% on the investment, and at the end of the lease period the equipment is still owned by the lease company. However, after that period the lease rent is reduced to about 5% for the continued use of the equipment.

Leasing sometimes involves irritating red-tape restrictions, as when a company is required to request permission to relocate a leased piece of equipment.

The payment of the lease, if there is no agreement to obtain the equipment at the end of the lease period, can be charged off as an expense. The cost of leasing is influenced by the credit rating, the value of the lease, the period the lease is to run and the type use that is to be made of the equipment.

In programming the modernization program, it is possible to tie the costs of the modernization to the company profits. If increased capacity is made a part of the program, the investment can be adjusted in some proportion to the capacity. Some modernizing expenses are actually maintenance costs and can be treated as such and it is necessary to provide the proper accounting to separate these from capital investment.

CONCLUSION — In this article there has been discussion on how modernization can decrease unit cost, improve product quality and reliability, increase plant versatility and provide for new product integration. These objectives truly lead to a better competitive position for the company. From these considerations we may conclude that modernization:

Must be considered by progressive management.

Is an inherent part of any business.

Should evolve constantly rather than intermittently.

Demands a thorough study for best results.

Cannot be neglected without risk of business failure.

Determining the best economic answer to obsolescence, our quest for industrial perpetual youth, is a tremendous challenge to our skills.

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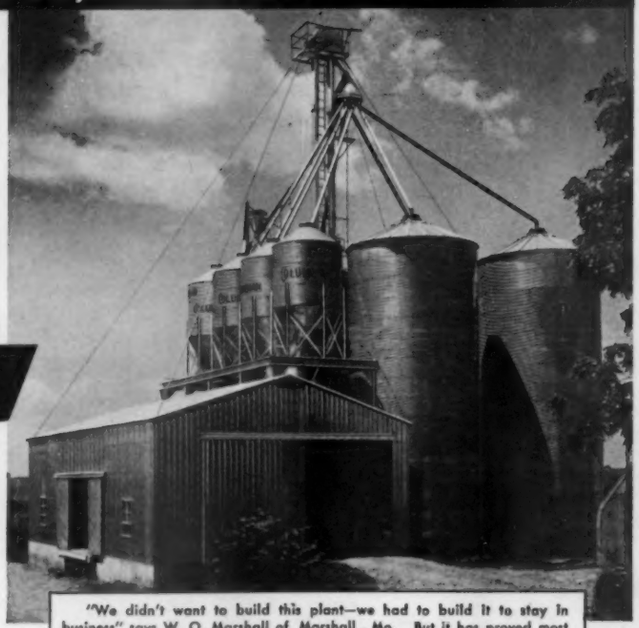
Saves Feeding Costs and Doubles Beef Production for Marshall Brothers



"We didn't want to build this plant—we had to build it to stay in business" says W. O. Marshall of Marshall, Mo. But it has proved most profitable for the operators. Columbian contractors, like Marshall Construction Co., Marshall, Mo. who built this plant, are available to help you work out your grain and feed handling problems.

Operating only 3½ hours a day, the modern feed plant pictured above feeds from 1,800 to 2,000 cattle a year for Marshall Brothers of Malta Bend, Mo. Since January 1, 1960, when this modern Columbian installation went into operation, the owners have doubled their beef production; gains have been increased an average of a pound a head per day; owning time of feeder cattle has been decreased by a third. Carcass grade and quality have been of such excellent quality that one St. Louis packing plant is currently purchasing the entire production. Yet the plant requires only two employees, spending only part of each day preparing feed and feeding cattle.

Marshall Brothers have found the plant an excellent investment. Obviously, annual beef production could be substantially increased by longer hours of daily operation. And even if they decided not to feed cattle, the 40,000 bu. storage facilities would assure a satisfactory return on their investment.

Columbian can help almost any grain storage or stock feeding operation to become more profitable and less costly. Columbian master-crafted equipment and engineering plus the facilities of Columbian-recommended contractors can provide you with a custom-tailored plant or plant addition that exactly fits your needs. Write today for the free Columbian Bulk Feed Equipment booklet. You'll find it most informative.

Equipment — MARSHALL BROS. PLANT — Operation

Columbian Rigid Frame Steel Building 32′ x 60′ with 16′ sidewalls.

4—18′ x 40′ Columbian Tall Tanks with concrete hopper bottoms.

Total storage capacity 38,000-40,000 bushels.

3—Columbian S-93 Bulk Feed Tanks (18.1 tons.)

1—Columbian C-93 Bulk Feed Tank (14.8 tons.)

1500-bushel-per-hour Bucket Elevator 85′ high with 14-hole distributor.

Diesel power plant with 150 K.W. generator for 440-volt power system.

50 HP Hammer Mill
15 HP Roller Mill
7½ HP 54′ Vertical Auger
8000 Gallon Concrete Molasses Storage Tank
1 Ton Horizontal Batch Mixer
9′ x 22′ Dial Truck Scale.

Grain trucks and trailer trucks delivering molasses and protein feeds are unloaded inside building from scale directly to dump pit or storage tank. Salt and other minerals are stored in bags.

One-ton batches of feed are mixed in portable mixer placed on truck scale for measuring each ingredient by weight.

Shelled corn or other basic grain is first run through rolling mill and elevated to overhead bulk feed tank #3 which discharges by gravity to mixer.

Hay ground by hammer mill is delivered directly to mixer.

Cotton seed, dry molasses, minerals etc. are added to mix by hand labor.

Mixed ingredients are emptied into dump pit then elevated to tanks for storage until needed at feed lots. Power unloading feed wagons drive thru building onto scale under bulk feed tanks for measured (weighed) loads.

COLUMBIAN STEEL TANK CO. P.O. Box C-4013 Kansas City, Mo.

Member, American Dehydrators Association; Associate Member Grain and Feed Dealers National Association

STEEL, Master-Crafted by Columbian . . . First for Lasting Strength

We do contract steel fabrication

Poultry Processing

FOREST, MISS.—Cudahy Packing Co. has asked for a $60,000 BAWI bond issue for expanding and remodeling the poultry processing facilities in Forest.

Mayor J. E. Calhound said he is ready to approve the new contract and a spokesman for the Mississippi A&I board said the contract would be approved by the board. The expansion would result in increased production and the hiring of more workers.

Cudahy Packing is now paying a rental on the basis of the number of birds processed. This figure has far exceeded the amount necessary to repay the present bonds and interest.

If the new issue is approved, Cudahy will install additional modern machinery representing a company investment of around $50,000. Production will be increased from the present 3,000 birds per hour to 4,800.

The company will retire the new bonds and interest as well as the present bonds, of which there is about $50,000 outstanding from the original $150,000.

Joins Mill Staff

BILLINGS, MONT.—M. A. Thorson, a 20-year veteran of the feed and elevator business in Montana, North Dakota and South Dakota, has joined the staff of the Montana Flour Mills Co. He will be fieldman for the firm in southeastern Montana and northern Wyoming. His headquarters will be in Great Falls, Mont.

MANAGER NAMED

LEWISTON, MINN.—Lewis Bass, Pemberton, Minn., has been named manager of the Lewiston Elevator Co. He replaces Gerald Danielson, who resigned to become manager of Plainview Feed & Produce, Plainview, Minn. Mr. Bass has been manager of the Bluhm Elevator Co. at Waldorf, a short distance from Pemberton.

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NATICO is the richest dry molasses product available! Add it to your feed for more profitable production and more *economical feeding costs.* Natico is an all sugar cane molasses product, adds attractive new color and fragrance to feeds . . . even makes dry home-grown grains and roughages tastier to livestock. Try Natico and watch feeding costs go down!

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John Kuhni Sons, Provo, Utah

FINANCING

(Continued from page 46)

ly had $5.20 invested per hen when it got through.

The spreading manifestations of that case have not yet been fully felt by the industry. For example, banks are now studying the legal implications of the present forms of collateralled notes and are seriously thinking about getting the form of the note changed. Poultry collateral has fallen out of favor. Why wouldn't it if you had to invest $5.20 to protect it? Bankers are paying a lot more attention to net worth and business reputation—not technical reputation—of the borrower. Some bankers have just turned away from you and it may take years to re-educate them.

Technology Not Enough

Poultry and feed technology is not enough. The industry is in its adolescence. As it matures, it will develop adult behavior patterns. Most particularly, it will develop rational management. Firms will increasingly turn to credit analysis. Detailed cost records and interpretation of these records so that standard cost accounting systems can be set up for everyone are now being developed by expert accountants. The whole idea of developing better auditing standards still has to be worked out.

The problems of the industry and its attempts to reach maturity and rational management are evidenced by the rash of mergers. As long as this means combining financial and managerial strength to build better firms, the merger movement shows that the industry is growing up. But whether segments of the industry, all trying to climb into the same boat, can learn to row together is another story.

The fall in the amount of poultry and feed credit is symptomatic of the bad light in which banks are holding you. The fact that production is increasing this year without a severe price drop, means that production is in stronger hands and under better control. Sure and steady growth is the hope for the industry. Those who would parlay a mountain of debt into a fortune are no longer wanted. The industry can not afford to get another financial black eye.

Field Sales Head Named by Bemis

ST. LOUIS—Appointment of Donald E. Prim, Detroit, as a field sales supervisor for Bemis Bro. Bag Co., has been announced by Fred M. Dreyer, sales manager of the Indianapolis sales division.

Donald E. Prim

In making the announcement, Mr. Dreyer said Mr. Prim will be responsible for sales in Michigan and northwestern Ohio and will continue to be headquartered in Detroit.

Mr. Prim, who joined the company in 1948, served as a multiwall bag factory representative following sales training. In 1956, he was transferred to the Detroit sales office as a sales representative.

U. E. Philpott, a field sales supervisor with offices in Indianapolis, will continue to be responsible for sales in Indiana, Kentucky and central and southern Ohio.

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

Expansion Started At Poultry Plant

WINSTON-SALEM, N.C.—One of North Carolina's largest poultry processing plants and a part of the Wilkes County area $50 million annual industry, Holly Farms Poultry Co., has an expansion program under way. According to Fred Lovette, president of the firm, floor space will be boosted 15,000 sq. ft., production increased by 2,000 birds per hour, number of employees increased by 150 and annual business increased by $5 million.

"One new section in the company's expanded operation will be devoted to freezing broilers—a process new to this section though already making headway in Virginia, Georgia, Arkansas and some other areas," Mr. Lovette said.

"A great many consumers prefer fresh and iced broilers, and these will continue to be a big line with us. But the frozen broiler, no less than the frozen turkey or goose or duck, is not only a first class food product but the only form of processed bird than many stores and other outlets are equipped to handle."

Mr. Lovette explained that outlets which cannot conveniently maintain equipment for keeping ice-packed birds can readily handle frozen products. "This same venture in the frozen broiler, I hope, will also push Holly Farms' marketing overseas," he continued. "We are laying the groundwork to export frozen birds to West Germany, Italy and a few South American countries. One of our staff members will be specially trained to handle this part of the company's operations.

"Capacity at the Holly Farms plant already has been increased from 9,600 birds per hour to 10,500. When the expansion is completed—by December—the kill rate will hit 12,000 per hour. The capacity could push the company's annual output to something like 25 million broilers."

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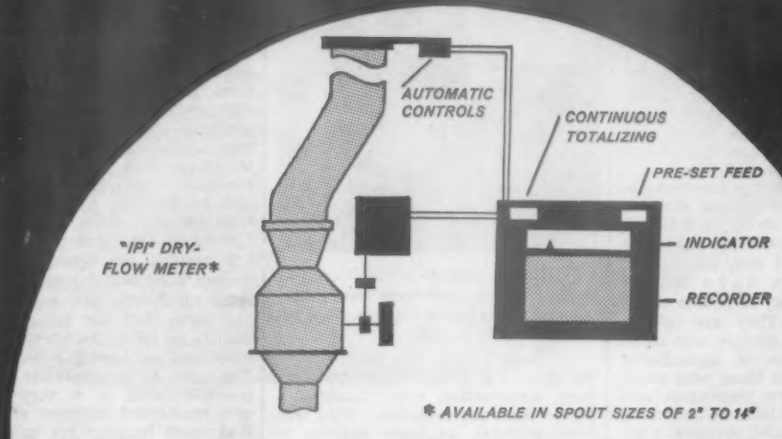

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The Feed Industry In the Changing Agricultural Economy

A feed industry executive presents comments on: Public relations, on-the-farm mixing, retail dealers, management's role, production techniques, in-plant costs, FDA regulations.

By W. L. Alley
Pay Way Feed Mills

W. L. Alley

AUTHOR—A veteran of the feed industry (since 1942), W. L. (Larry) Alley is vice president of Pay Way Feed Mills, Kansas City. His work for Pay Way is primarily concerned with purchasing, production and traffic. Mr. Alley has taken an active part in several feed industry activities, including the Midwest Feed Manufacturers Assn. and the American Feed Manufacturers Assn. And currently he is board chairman of the Feed Production School.

"It must be considered that there is nothing more difficult to carry out nor more doubtful of success, nor more dangerous to handle than to initiate a new order of things. For the reformer has enemies in all those who would lose by a new order, and only lukewarm defenders in all those who would profit by a new order; the lukewarmness arising partly from fear of their adversaries who have the laws in their favor and partly from the incredulity of mankind, who do not truly believe in anything new until they have had the actual experience of it."

The above quotation becomes more interesting when one considers when it was written and by whom. This quotation is from "The Prince", a book written by Nicolo Machiavelli and first published in 1532.

Probably no industry as dynamic as ours has absorbed so many changes so fast. Ours is a changing industry and must, of necessity, be so. The great technological changes in our agricultural system have brought forth a new category of people called "change agents." They are professional agricultural leaders who serve as the middle-men of agricultural processes. They are those who study changes. They are innovators and early adopters and have helped speed along our agricultural changes. I am sure our industry, which has absorbed so many changes, will continue to hold its place in our changing agricultural economy.

A recent issue of a farm magazine asked in a large headline: "What Is the Real Farm Problem?" The answer, summarized, was: "Lack of a public relations program." This was quite a relief, as many articles in farm papers and trade journals have quoted agricultural colleges and ads from farm equipment manufacturers which would indicate the feed manufacturer was about the only problem the farmer had left. Many of these articles seem to indicate the farmer's salvation is to engage in the feed manufacturing business himself. Further study of these articles usually finds some reference to concentrates or supplements, so I assume this is some acknowledgement that the feed industry may continue to play some part in our great American economy.

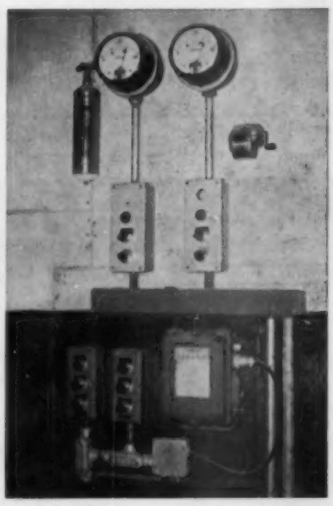

EXHIBIT 2. Remote controls such as these can help automate feed grinding and reduce man-hours-per-ton requirements in a mill.

Farm Mixing Not New

On-the-farm mixing is really not new—it may be just a continuation in the great cycle of living. I helped mix feed for laying hens on the farm 30 years ago. While we used the scoop shovel method of mixing on the farm, I'm not so sure but what we did as good a job as some of the procedures that are recommended to the farmer today. We discontinued the farm feed manufacturing when formula feeds were available, and I still cannot get too alarmed about feed manufacturing being lost completely to the farmer today.

I assume the farmer could save money if he would assemble his own farm machinery and automobiles on the farm, but for some reason he sees fit to leave the job to the equipment and automobile manufacturers. I'm sure he understands that feed manufacturing is a very technical and specialized business and he can find much better ways to utilize his time. It's a known fact today that each agricultural worker must produce food for 23 persons so he has his work pretty well cut out for him.

I do not necessarily mean there will not be changes in feed manufacturing and distribution methods. The fact of the matter is that already we have seen many of them. But to say all feed should be mixed by the feeder or farmer or to say that the retail dealer is definitely a thing of the past seems to be a little far-fetched at this time.

One comment I saw some time ago brought out the fact that the commodity the farmer purchased was worth only as much as the service accompanying it. Very few feed manufacturers can perform the type of service the farmer-feeder needs or is entitled to. They can very advantageously use the well-trained and progressive feed dealer to do the job of farm service which so rightfully

MAN HOURS PER TON*

	COST CENTER	30 TON MILL	100 TON MILL	200 TON MILL
I	RECEIVING	0.162	0.080	0.071
II	PROCESSING	0.038	0.019	0.008
III	MIXING	0.341	0.145	0.122
IV	PELLETING	0.119	0.075	0.046
V	PACKING	0.175	0.109	0.087
VI	WAREHOUSING	0.671 1.506	0.309 0.737	0.264 0.598
VIII	MAINTENANCE	0.160	0.150	0.126
	TOTAL LABOR	1.666	0.887	0.724
	FOREMAN	0.133	0.080	0.080
	TOTAL	1.799	0.967	0.804
		3 TONS PER HOUR	6 TONS PER HOUR	9 TONS PER HOUR
VII	HIGH MOLASSES	0.369	0.212	0.216

* Figures based on total tons of feed produced per day, not at tonnage at each Cost Center

EXHIBIT 1. These standards for in-plant costs, fairly well accepted by the industry, are the result of a research project reported at the 1956 Feed Production School. Summarized here are figures on man-hours per ton, as contained in copyrighted proceedings of the school.

EXHIBIT 3. Greater efficiency can be introduced to the feed sacking operation with a system like the one illustrated here. One man (first picture) operates packaging unit and sends filled sacks along conveyor (second picture) to driver loading truck.

Minutes Are Money

WHAT FIVE (5) MINUTES LOST PER EMPLOYEE PER DAY COSTS

BASED ON 8 HR. DAY, 5 DAY WEEK, 255 WORKING DAYS PER YEAR, OVERHEAD COST TAKEN EQUAL TO HOURLY RATE

HOURLY RATE	5	10	25	50	100	500
1.25	265.60	531.20	1,328.00	2,656.00	5,312.00	26,560.00
1.50	318.80	637.50	1,594.00	3,188.00	6,376.00	31,880.00
1.75	371.90	743.80	1,859,40	3,719.00	7,438.00	37,190.00
2.00	425.00	850.00	2,125.00	4,250.00	8,500.00	42,500.00
2.50	531.30	1,062.50	2,656.50	5,313.00	10,626.00	53,130.00
3.00	637.50	1,275.00	3,187.50	6,375.00	12,750.00	63,750.00

EXHIBIT 4. Chart shows how important it is to keep lost time of employees as low as possible.

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A Superior Dry Vitamin A Feed Supplement

PROVEN STABILITY: Dawe's FIXTAY retains a high degree of potency over extended periods under normal and elevated temperature and humidity conditions. Even in high mineral mixtures, containing as much as 40% trace minerals, Dawe's FIXTAY maintained this remarkable stability:

MIXTURE No.	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Percent of Vitamin A remaining after 3 months	98.6	97.8	95.4	98.6	95.6	95.4

COMPLETE AVAILABILITY: Biological tests prove Dawe's FIXTAY is fully available to the animal for early absorption in the digestive tract.

UNIFORM DISPERSION: Dawe's FIXTAY is of a particle size and shape which readily disperses and remains uniformly distributed.

Dawe's FIXTAY is available in all practical potencies. Write for samples and quotations on the potency of your choice.

World's Oldest and Largest Specialists in Vitamin Products for Feeds

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Murphy-Cardinal Scales combine the strength of high tensile STEEL and the simplicity of ADVANCED DESIGN to bring you greater all 'round economy. Murphy-Cardinal's Double Link Suspension Bearings absorb heavy impacts and provide a sturdy free floating platform of either concrete or timber. Capacities and platform sizes available on request.

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belongs to him. The feed dealer can also do a fine job in helping to carry the inventory of the farmers' needs and also by helping the farmer with his credit problems. The feed dealer may carry other related agricultural items and it may be that he will, of necessity, carry a good line of concentrates and operate a grinding and mixing and a grain bank service for his customers. I am sure of one thing —if he does his job well, he will grow with his community.

I think we should not lose sight of the primary reason for the existence of the feed manufacturing industry: To supply a quality product that will enable the farmer or feeder to produce quality meat, milk and eggs at a lower cost of production than can be done from any other source. To do this calls for a great deal of flexibility on the part of management, but also very strong and resourceful management.

Four Resources

It has been said that there are four resources that a firm uses to produce market goods or perform its services. They are: Management, men, money and material. A well-managed business is satisfying to customers, employees, stockholders, and the public.

The role of management may be divided into five fairly distinct functions or areas of duties and they are: (1) Planning, (2) organizing, (3) directing, (4) coordinating, and (5) controlling.

The progress of the firm is governed by how well management plans, organizes, directs, coordinates and controls its men, money and material. Each department is affected by the very same areas of duties.

Let's consider for a moment the production phase of the formula feed industry. We seemingly have two extremes in the feed manufacturing business, with many combinations of both in between. One of the extremes is the highly specialized plant completely bulk and automated, making very few feeds. Some of these plants are producing at the rate of 2-3 tons per man-hour.

In the other extreme is a plant equally automated, but making a full line of products for all livestock and poultry with many variations in each line as to medication, physical forms and packages. Or in other words, trying to be all things to all people.

Needless to say, production problems are vastly different in each plant and are subject to management's aims and programs. Each of these will serve a definite need and can succeed if the manufacturer keeps abreast of changes, knows his costs and helps his customers make their profit.

In-Plant Cost Standards

In 1956, the Midwest Feed Production School, which is a forerunner of Feed Production School, had as a research project in-plant costs standards. These standards have been fairly well accepted by industry and are used as guides in many cases. Let's review the cost centers as set up for the 100 ton mill. (Refer to Exhibit 1.)

The first cost center is ingredient receiving. Here we find that some progress has been made in that more ingredients are being handled in bulk and, also, more hopper cars are being

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IN DEMAND EVERYWHERE... ALL OF THE TIME

PILOT BRAND knows no season. It's a best seller the year 'round. Poultry raisers have learned that this ideal eggshell material helps them get more eggs... eggs with stronger shells... eggs that bring top prices in the market.

Constant demand for PILOT BRAND means steady sales and profits for you. And we help to bring more and more business your way with powerful national advertising.

PILOT BRAND Oyster Shell is uniformly pure calcium carbonate... kiln-dried... costs less per usable pound. Stock it—display it—promote it!

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Planning a new mill or elevator?
KELLY DUPLEX can help you.

Maybe you've been thinking about a new mill—a new addition—or a new machine. Then again, maybe you've just been wondering how you can get MORE from your present space.

Whatever it is, we would like to talk to you about it.

We've shown a lot of others how good machinery and good planning can do wonders for their capacity, their efficiency, and their profits—at COMMON SENSE COST. The chances are we can do the same for you.

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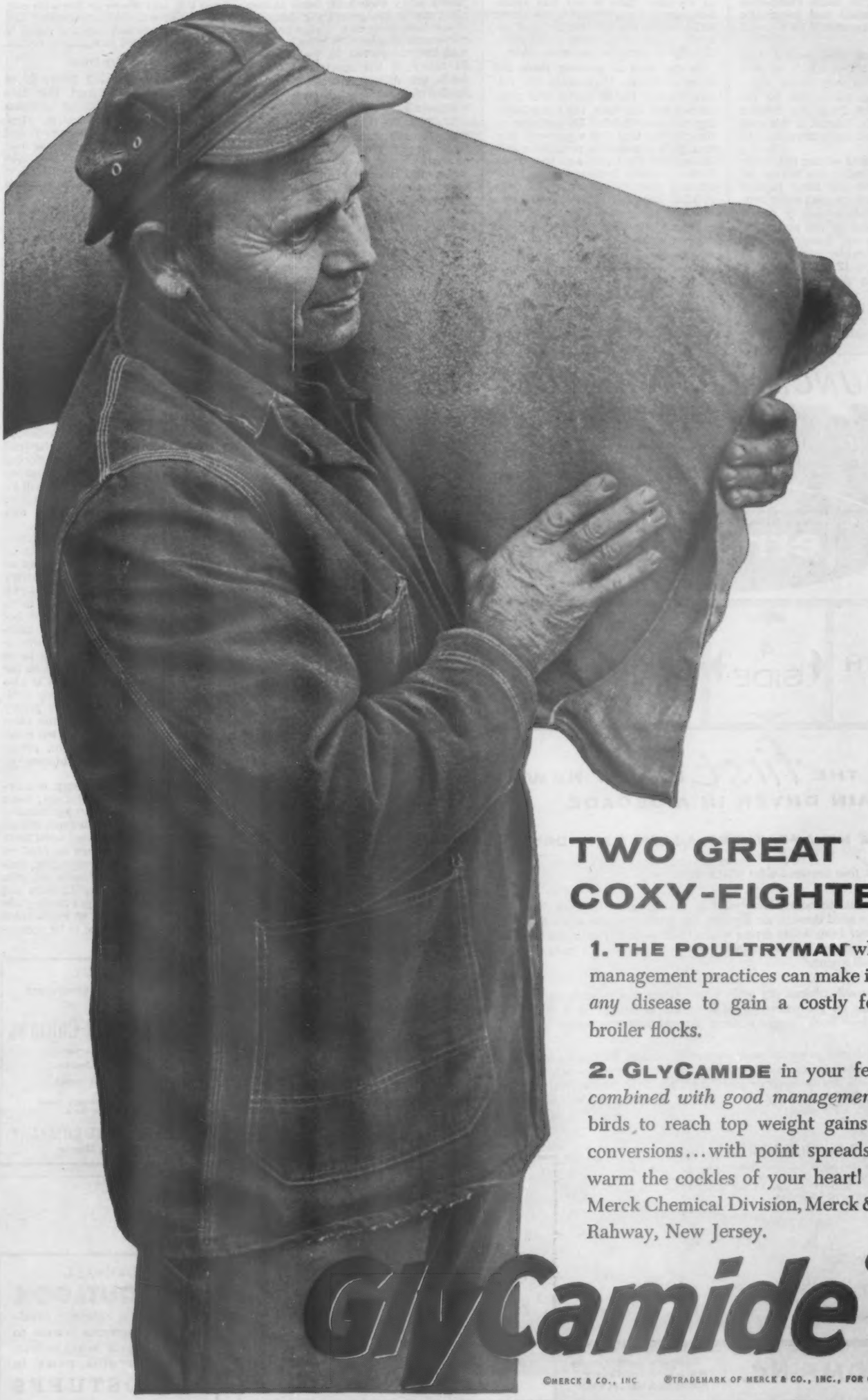

TWO GREAT COXY-FIGHTERS!

1. THE POULTRYMAN whose sound management practices can make it tough for *any* disease to gain a costly foothold in broiler flocks.

2. GLYCAMIDE in your feed which, *combined with good management,* permits birds to reach top weight gains and feed conversions... with point spreads that will warm the cockles of your heart!

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used. We believe this particular cost center, utilizing, as many companies do, both mechanical and pneumatic unloading systems, should be reduced to .05.

The processing cost center was carried in the 100-ton mill at .019 and, while this is very easily automated so the grinding can be remotely controlled from the mixing room (Exhibit 2), I doubt if this cost should be reduced much more than to .01.

The cost center of mixing has many problems today with the advent of the various Food and Drug regulations. I think perhaps with some control over the volume-variety factor and utilizing some of the automatic mixing systems we have available today, this cost center would run in the area of .10 to .12.

The next cost center is that of pelleting and, as you all know, there is available on the market today a completely automatic pelleting set-up. I'm not too sure it would have any direct bearing on the man-hours, as we have them in our cost study. However, I am sure that in the larger mills where it's possible for one operator to supervise many pellet mills, this figure could be improved upon.

In the field of packing there are many variables. Here again, the volume variety factor comes into play. As you can see from the accompanying pictures (Exhibit 3), one man on the packing unit and a conveyor system with a conveyor projecting into the customer's truck and the driver loading his own truck provide a fairly efficient packing system at the rate of 10-12 bags per minute. Of course, the packaging cost center would be eliminated on the portion of feed shipped in bulk.

We now come into the cost center of warehousing, and I'm sure this is where many of the highly specialized plants are able to make their great savings in man-hours. As the variety increases, quite often the volume per item decreases and the costs of processing and handling increase. Many plants carry their bulk feeds in bins right off of the processing line, and either load their own trucks or their customers' trucks with practically no man-hours involved in warehousing. In many of the specialized plants, feeds are delivered directly to the feedlot and there is no intermediate warehousing.

We find also that in loading of bulk feeds for rail shipment, it is possible to go directly from processing to box or hopper car or to go through hopper scales into the conveyance. In either case, there is a substantial savings of manpower.

Using the packing system mentioned above—one man packing a conveyor system direct to the truck or to the car—a fairly low man-hour per ton figure can be reached. In going to warehouse floor and loading out again, the man-hour cost can rise rapidly.

Now for the cost center of maintenance. Utilization of a good preventive maintenance program can help keep this cost center in line with continuing trends to automation, but most of us will not improve much in man-hours needed in this cost center.

Cents Per Hour

We've been speaking primarily of man-hours. Now convert this into cents per hour and you can evaluate your situation a little better. Here again is where good management and planning come into play because only by utilizing the time of each employee will you be able to maintain control of your costs. This is management's obligation.

I received in the mail the other day a little chart entitled "Minutes Are Money" (Exhibit 4). I thought it was rather interesting because here is a case in which you can take your own hourly rate and get a fair idea of what it costs for five minutes of lost time per employee per day.

We have many problems in our changing industry, but I know of no industry that is working harder to help everyone meet the objectives and find the answers to the problems. We have the feed technology program at Manhattan, Kansas, which is a wonderful tool for everyone in the industry. We also have the Feed Production School, Inc., which has dedicated the past 11 years to helping the feed industry lower the cost of producing meat, milk and eggs. The program for 1961 is getting under way and will be extremely important in helping to meet the trend to automation and cost reduction.

The school for 1960 is covering several important facets of feed manufacturing and has dedicated a lot of time to finding some of the answers to complying with Food and Drug Administration regulations. I think this can be extremely important because as we accept the many additives that are used in the formula feed business, it's certainly up to us to see they are used for the jobs for which they were designed. It is also up to our industry to meet this challenge so that we can better justify our position in relation to the farm feed manufacturer who will not exercise any controls or mixing procedures relative to the additives or drugs.

I think we, as an industry, can improve our own public relations; work more closely with our agricultural schools so we have a common understanding of our objectives; work more closely with the "change agents," as they are known in our changing agricultural economy and, above all, take the lead in helping our farmers and feeders meet the changes as they are affected by them. And, as we do these things, we will continue to be a growing, dynamic industry.

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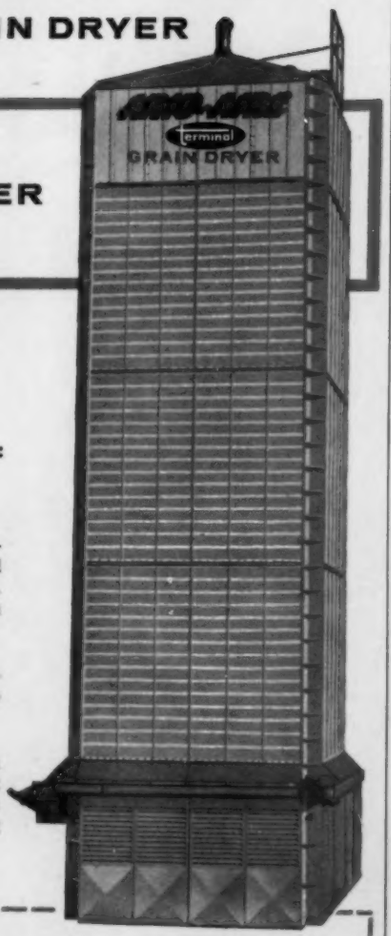

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CHECK THE NEW FEATURES AGAINST ANY DRYER:

1 Utilizes all *four* louvered sides of the dryer

2 Maximum fuel economy. Heat *must* go through grain to leave dryer — no heat is wasted through air ducts or non-productive side walls. Carload drying power from 4-side drying works faster — and it costs less to run. Operating costs are less than a penny a bushel for corn, soybeans — even less on small grains.

3 4-side *louvered* columns dry grain better, faster. Exclusive louvered drying columns let grain flow gently from top to bottom as it dries. No problems here from clogged screens, plugged baffles, or damp spots.

4 More fast drying power in smaller space. Gives you increased capacity in a smaller structure — Arid-Aire Terminal Grain Dryer is only 47 feet high, yet will dry as much or more grain per hour than ordinary dryers 60 to 70 feet high Only the Arid-Aire Terminal model has drying columns on all 4 sides.

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PRODUCTION EFFICIENCY

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1. ORIGINALITY–

Chas. Vantress Farms originated the modern theory of cross breeding for production of meat type chickens. (Separation of Male and Female Lines and taking proper breeding direction for each line.)

Chas. Vantress Farms originated and developed the birds to fit the modern theory, demonstrating the soundness of the theory and value of the stock developed, through winning the famous — National Chicken of Tomorrow contests.

2. SPECIALIZATION–

Chas. Vantress Farms are now dedicated to the specialized business of Male Line Breeding ONLY.

Chas. Vantress Farms are non-competitive with customers and are a protection to all customers by assuring them of equality in male line breeding stock with all other Vantress Customers. **Chas. Vantress Farms does not engage in any other phase of the meat chicken business.**

3. PROGRESS–

Substitute cockerels for breeding are available from at least a dozen sources — "the woods" are full of sources who offer males, but the Chas. Vantress program of Applied Genetics originated **(1) the theory, (2) the birds and (3) the system of pedigree breeding for meat production improvement** and is the fountain head source for male line breeding cockerels now and for the future.

The Chas. Vantress program is dedicated to breeding gains for producers, processors and consumers.

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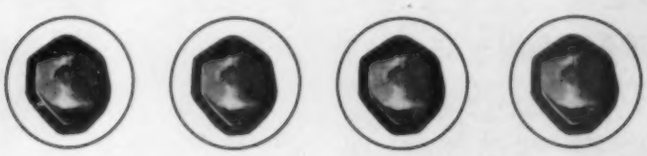
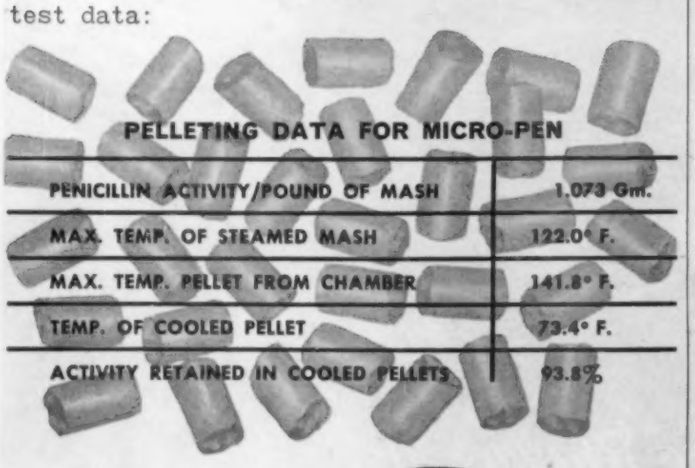


The potency of each minute crystal is given a longer life by a unique manufacturing method that fully coats each and every crystal... protecting it from the effects of heat, moisture, and pressure.

Actual pelleting test confirms excellent stability of Micro-Pen:

A 500-lb. batch of basal broiler ration with Micro-Pen was pelleted. Feed samples were collected in triplicate for penicillin assays. Temperatures were recorded at the following times: 1) before pelleting, 2) immediately after the hot pellets were taken from the pelleting chamber, and 3) at the time the cooled pellets were bagged. Here is the actual test data:



PELLETING DATA FOR MICRO-PEN

PENICILLIN ACTIVITY/POUND OF MASH	1.073 Gm.
MAX. TEMP. OF STEAMED MASH	122.0° F.
MAX. TEMP. PELLET FROM CHAMBER	141.8° F.
TEMP. OF COOLED PELLET	73.4° F.
ACTIVITY RETAINED IN COOLED PELLETS	93.8%

For more research data, write...

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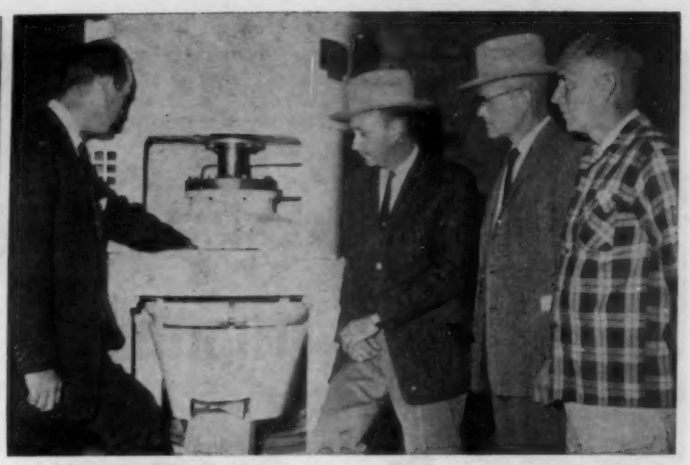

GIVEN PELLET MILL.—This pellet mill, to be used for animal nutrition research, was recently presented to the Montana State College Agricultural Experiment Station, Bozeman, by California Pellet Mill Co. Accepting the mill from Wayne E. Bennett, left, a representative of the California firm, is Dr. Roy E. Huffman, second from left, director of the experiment station. Watching the presentation are Dr. O. O. Thomas, second from right, professor of animal nutrition, and Fred S. Willson, head of the MSC animal industry and range management department.

FDA's Inspection Points Listed for Feed Manufacturers

SACRAMENTO—Points which are checked by Food and Drug Administration inspectors have been listed for medicated feed manufacturers by the California Hay, Grain & Feed Dealers Assn. The bulletin warns that FDA inspection is being stepped up and manufacturers should check the published list to avoid difficulties.

These points from the inspector's manual are:

(a) Check batch formulas for drug component, amount, etc., and for any new or unusual feed ingredient.

(b) Check storage of supplier's premix, and if an additional premix is made by the firm, check storage of this additional premix to ascertain that methods of storage will not result in an overage or shortage and that non-medicated feeds are not contaminated by the medicated feeds.

(c) Check equipment against that specified in the new-drug applications or Antibiotic Form 10's.

(d) Check equipment for evidence of proper electrical grounding to prevent electrostatic interference with mixing.

(e) Report whether same equipment is used to mix different medicated feeds and/or medicated and non-medicated feeds.

(f) Determine the adequacy of cleaning of mixing equipment and how it is cleaned.

(f) Observe methods, if any, used to control dust containing drug components from entering other plant operations.

(h) Determine what happens to the dust collected in dust collectors during medicated and non-medicated feed manufacturing.

(i) What precautions are taken to insure that drug components actually are mixed into each batch of medicated feed?

(j) Routinely check the method of sampling and frequency, laboratory facilities if the firm has one.

(k) Check labeling, including that for bulk shipment.

(l) If feed manufacturer sells in bulk, using either own trucks or contracted trucks, ascertain precautions taken to prevent contamination of other feeds hauled in same truck.

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This little 286 pound powerhouse will astonish you with its pulling force of more than 1300 pounds and work output of 100 tons per hour.

Dollar for dollar the rugged STOHR ROTO SHOVEL gives you more . . . the ease of handling, capacity, and dependable, money-saving results . . . than other power shovels costing nearly twice as much.

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Kind of Feed	Natural Kraft Construction	"Optimum" WONDERWALL	User Benefits	"Economy" WONDERWALL	User Benefits
Laying Mashes	2/40, 1/50 = 130#	1/50, 1/70 = 120#	Reduced breakage; same cost	1/50, 1/60 = 110#	Less breakage; save $3.30 per M
Coarse Grains	1/40, 2/50 = 140#	1/50, 1/70 = 120#	Reduced breakage; save $3.30 per M	1/50, 1/60 = 110#	Less breakage; save $6.60 per M
Small and Medium Pellets	3/50 = 150#	1/60, 1/70 = 130#	Reduced breakage; save $1.65 per M	1/50, 1/70 = 120#	Less breakage; save $6.60 per M

During a controlled research program to determine possible savings in bag costs, various WONDERWALL constructions were tested by 53 packers who shipped 57,263 tons of feed in 2,290,522 WONDERWALL bags.

Result of this laboratory and field proving was the development of new, superior constructions for all types of feed bags.

Two of the new constructions are shown in the box with their benefits. Similar economies are obtainable with other sizes and with white outer sheets.

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Our technical service experts are ready to help you. Call or write Multiwall Bag Division, West Virginia Pulp & Paper Company, 230 Park Avenue, New York 17, N.Y.

*Clupak, Inc.'s trademark for extensible paper manufactured under its authority and satisfying its specifications.

West Virginia Pulp and Paper

Field Service Man Plays Important Role in Selling To Dairies, Poultry Farms

"Business just doesn't come to us anymore; it must be sought after or created."

By Jess Blair
Feedstuffs Special Writer

The last few years have seen the emergence of a figure who might not have been recognized in the feed industry a decade ago. This is the outside salesman or field service man. Though he may have been found with larger feed companies ten years ago, his duties have been vastly changed.

In California, in particular, the serviceman has become important to the success of any mill that is fighting for business. His job varies from one mill to another, but the main purpose is to sell more feed. Yet he spends more of his time with regular customers, helping them with management problems so they won't start using someone else's feed.

The service man is most in demand by mills which cater to dairies and poultry farms. Most feedlots manufacture their own feed; and some of the larger ones may have a nutritionist on the staff. Quite often the superintendent is a college-trained man who formulates his own feed mixtures. When real trouble comes along, a veterinarian is called.

Feed companies that make feed for turkeys and broilers may have a service man. An important field is with dairy cows and laying hens, because the maintenance problems are complicated.

One example of a typical service man is O. K. Parks, who is employed by the Albers Feed & Farm Supply, Modesto, Cal. Mr. Parks grew up on a Texas farm, graduated from agricultural college with a degree in animal husbandry and migrated to California. He has spent most of his adult life in the dairying field and works exclusively with dairy owners.

Mr. Parks visits each customer regularly, checks to see if the feed bins need refilling, and talks over problems with the owner. He keeps some figures on feeding tests and listens to complaints and problems and tries to solve them. If the owner wants to expand his plant, Mr. Parks will go over each detail with him. The service man also tries to get customers started on a well-planned calf program, keeps them advised on new products and is an advisor on sanitation programs.

"I don't have any set route or schedule," said Mr. Parks, "because some owners need more help than others. I go wherever I can be of the most help. The main thing is to get dairymen on a good feeding and management program. Unless they can make a steady profit, some other feed company may get their business."

Mr. Parks also has a daily conference with the store manager, checks with feed deliverymen on anything they may have heard or observed and makes personal calls on new dairymen to see if they can be converted into customers.

"A field service man should know his field," explained Mr. Parks, "but the two essentials, I think, are to make no false claims about feed and to get along with people. In trying to convince some customer that he is doing something wrong, a lot of tact and patience is needed."

The service man usually works on a straight salary, but some feed companies pay a salary plus a commission on feed sales. Since there are so many duties, most mill owners prefer the salary plan.

Many of the large companies have several service men. The Albers Feed & Farm Supply has three others—one for broilers, one for laying hens and another for turkeys. Each man works exclusively in his own field, though he keeps in close touch with the others on mutual problems.

More and more the very large feed companies are employing veterinarians on their staffs. At Arlington, Cal., the Brookhurst Mill has a veterinarian who started working one day a week, but is now putting in almost full time. Since the company is now providing feed for well over a million laying hens, the veterinarian has a full work schedule.

Usually the poultry service man works much like those in dairying, though the duties are different. There is usually more routine work to the job, because he may be called upon to help out with culling, vaccinating and inspecting the farm for ailing birds. Quite often he will take a sick hen and send her to a state laboratory for an analysis.

One problem the service man has in poultry is being asked to do too much. Some poultrymen depend too much upon his services and may call him out for the most trivial reason. This becomes a diplomatic position,

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Capacity increases of 40 percent or more, based on model for model and drier investment comparisons, are typical. Finished grain has a uniformly dried quality and precision reliability beyond even previous Shanzer standards; and automated operational convenience and safety are further improved by Shanzer's all new *Drier Control Center.*

There never was a better time to decide on a drier, nor a better drier value to choose than the new *Thirtieth Anniversary Drier* from Shanzer. Call your Shanzer representative, today.

Automated operation with maximum safety and convenience are incorporated in Shanzer's new *Drier Control Center.* Electrical components are prewired at the factory for additional savings to the customer through reduced field wiring costs. Features include: automatic purging, ignition and temperature control; fused protection ahead of each motor starter; main entrance safety disconnect switch; and a complete "safety group" shutdown action covering high inlet temperature, high exhaust temperature, flame, fan or power failure.

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Dry, free-flowing partially hydrogenated animal fat.

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Effective dog food deodorant.

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SERVICE MAN—O. K. Parks is responsible for Albers Feed & Farm Supply calf growing program. A college man with a number of years of experience, he is partly responsible for the increased business his company enjoys.

because he must at times refrain from so many visits, and yet do it without offending the customer.

Seldom is the field service man asked to work at the mill in spare time or to deliver feed, although some of them use pick-up trucks and may make small deliveries that coincide with their regular visits.

The ideal man for this position is college-trained and has had from five to 10 years experience. Some service men never went to college but learned from a lifetime in the industry. Such a man may be indispensable to his own firm, but is seldom sought after by rival companies. The accent is on college training and the young man who contemplates entering this field has very little chance without a degree in agriculture, preferably in the exact field where he plans to work.

In summing up why the service man or outside salesman has become so important in the feed industry, one mill owner told it this way: "Business just doesn't come to us anymore; it must be sought after or created. We are all treading uncertain ground. Feed mills are competing for a dwindling business in some areas.

"Our mill is making feed for about 5,000 milk cows. We know that there won't be any more dairies coming in and that three or four smaller ones will go out of business each year. So my outside service men and I are spending extra time with our better customers, hoping they will make enough profit to enlarge their herds. Then we can sell more feed, even though the number of dairies continues to dwindle.

"Every mill in this area and for 100 miles around is trying to cut in for more business here. If we let up one iota on service work, somebody will send a smart boy out to see our customers and take a few of them away from us.

"In my opinion the outside salesmen are as necessary to my business as the fellow who runs the mixing plant or delivery truck."

Distributor Appointed

SPRINGFIELD, OHIO—The Buckeye Incubator Co., maker of incubators, mechanical feeders and poultry equipment in Springfield, has announced the appointment of a new distributor, The Bradshaw Supply Co.

The Bradshaw company, serving in the southeastern states, has outlets in Canton, Ga.; Siler City, N.C., and Albertville, Ala. The new distributor will handle sales and service on Buckeye E-Z Feeders, including repair parts.

In making the announcement, the Buckeye Incubator officials reported that this addition will in no way affect the function of the present Buckeye warehouses in these areas.

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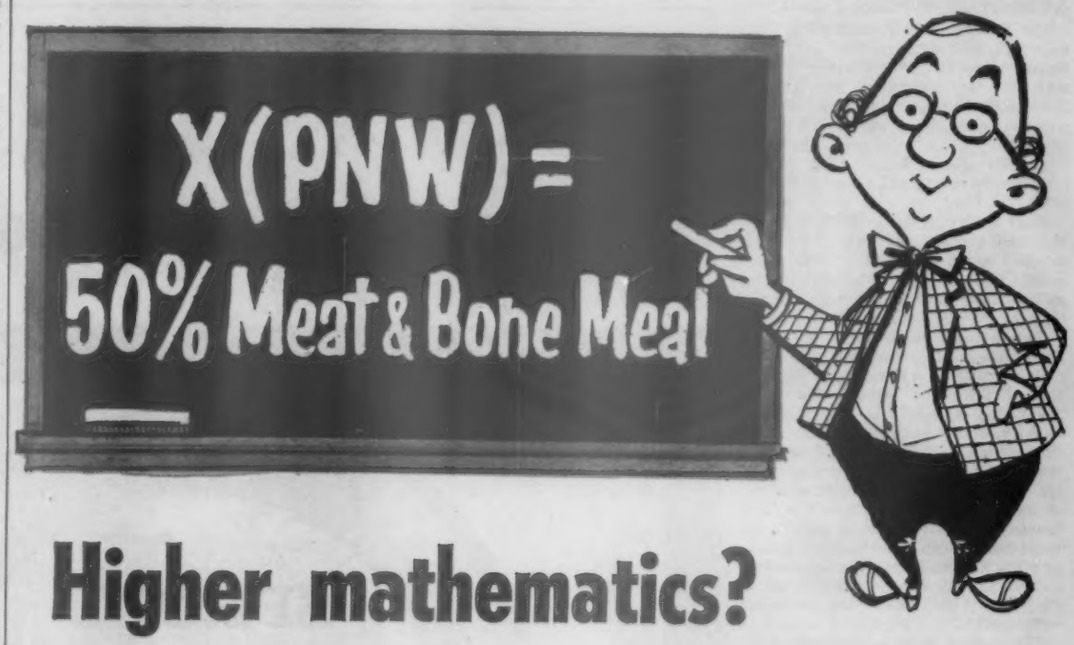

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Protein	Riboflavin
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Plus Unidentified Growth Factors
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Partial Nutritional Worth sounds complicated but all it really means is a measurement of the actual worth of the protein, energy, vitamins and minerals in relation to the market price of the ingredient. Your feed dollar buys more of the important feed values when you invest it in Meat and Bone Meal.

50% Meat and Bone Meal gives a better balance of vital growth ingredients for better conversion and more weight gain at lower cost per pound. Truly outstanding results can be expected from the Unidentified Growth Factors found only in Meat and Bone Meal.

Start getting your extra dividend regularly by:

(1) Including full quotas of Meat and Bone Meal and stabilized animal fats in feed rations.

(2) Taking advantage of the P.N.W. of animal by-products in relation to market prices.

(3) Getting the low-cost protein and energy supplied by animal by-products in concentrated form.

Let this feed ingredient build more sales and better profits for you. Write today for our free booklets on Meat and Bone Meal. They'll help you improve feeds and profits in mills of every size.

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JOE BROOKS

BY AL P. NELSON

Changes Should Come Gradually

Mort Keller, a heavy set, unshaven farmer smoking a cigar, came into Joe Brooks' office and slapped a grind and mix sales slip on the desk.

"Hi, Mort," Joe greeted cheerfully. "How are things with you today?"

Mort Keller frowned, then shrugged his shoulders. "Okay, I guess."

Joe Brooks was a student of human nature—he had to deal with different types of farmers every day—and he knew something was amiss. Mort was usually a jovial fellow. It was not often he appeared in a surly mood.

So Joe tried another tack. "Was our service satisfactory today, Mort?"

Mort Keller blinked. "Well, I guess the boys ground and mixed my feed as well as they ever did." He hesitated. "Joe, are your men going to night school or taking correspondence courses or something?"

Joe looked surprised, and even Rusty Hagen, the runtish bookkeeper, looked up from his work. "Why not that I know of, Mort," Joe said. "Why do you ask?"

Mort took a puff on his half-smoked cigar. "Well, when I came in with my grist, Milt Peters greeted me, and then he said something about he heard a college research man had developed a frozen ham, egg and toast package that drops into a toaster for a hot breakfast in one minute."

"Oh?" said Joe. "That's news to me, too. What won't they come up with next?"

Mort gave him a quizzical look. "Then while the feed was mixing, I ran into Butterball Barlow, and he told me that he read where some fellow mixed chopped eggs with other tasty stuff and packaged it in the shape of a hot dog. Butterball said this would provide a bigger market for eggs."

Joe Is Puzzled

Now it was Joe's turn to be puzzled. It was a surprise to him to learn that his employees were passing out such farm information to customers.

"Then," Mort went on sourly, "I met Smiley Johnson, and he told me that he read somewhere that farmers can save from $3 to $3.30 per acre using minimum tillage methods."

"Well!" said Joe in surprise.

Mort gritted his teeth. "Then Pop Henley was standing talking to me while my bulk feed was spouting into my truck. Pop says, with a wise look on his face, that he heard in the future fruits, vegetables and eggs will be inspected and graded by closed circuit television."

Joe watched the frown on Mort's face. "Don't you like to hear all these latest developments?"

"No, sir!" thundered Mort. "Do you think I come to this feed mill to hear stuff like that? Holy cow, if your men are going to turn into a bunch of college professors I'm gonna get my feed ground and mixed someplace else, Joe. And I'm not kidding."

Joe looked serious. "Sorry to hear that from you, Mort. I really don't know what got into the boys. Of course, we always encourage them to keep up on agricultural developments. They must have taken this advice to heart."

Mort looked sharply at Joe. "So you don't know anything about it, huh? Let me tell you something Joe. Know what I've come to this mill for —nigh onto eight years now?"

"For grinding and mixing service which is the best in the country," Joe grinned.

"Yeah, that's part of it, Joe. But I like to come here to gas a little while my feed is being ground. Used to be a fellow could hear three or four jokes every time he came here and get some good belly laughs. And a farmer needs some belly laughs, Joe, the way most farm prices are today. You're not gonna get those laughs talking with others farmers—or with the wife who's overworked.

Joe looked amazed.

"Not that I'm against getting a little advice, Joe, but I don't want it so darn serious. I like a joke, and then a wise crack about a new farming idea. Not this serious darned college professor way of talking. The place for that is in farm reports and magazines. A feed mill should be a place where a farmer can have man-to-man talk with a dealer and his employees, with no holds barred—

Use Your Own Salt and Calcium with
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SPROUT-WALDRON PELLET MILL SUPERIORITY

JS/120P

except if the preacher happens to wander in."

By this time both Rusty Hagen and Joe Brooks were smiling. "Mort, I think you are right," said Joe warmly. "I'll talk to the boys about it. There'll be a change in approach the next time you come in."

Mort's brown eyes searched Joe's face. "Darn it, I think you're telling the truth, Joe. This wasn't a top brass order, then, was it?"

Joe shook his head. "No, sir."

"Well, then," said Mort, "I guess I'll keep bringing my grain here and buying my feed. If this professor stuff had been a top brass order, then I'd have known it was hopeless to come back. But now I can see changes coming. I always did like to come here, Joe. By the way, don't you know any good stories to tell me?"

"Sure," said Joe, "I know a dandy about a farmer who hurt his knee and had quite a stay in a hospital. I'll walk out in the warehouse with you and give you the details. I don't want to disturb Rusty. He's just trying to strike a monthly balance, and I want him to keep his mind on the job."

Mort smiled. "Now that's the way I like to be treated," he said. "Nothing like a good story to brighten the day. I hope it's the kind I can tell my wife. Makes her feel better for an hour or two when I can get her to laugh."

ADDITION STARTED

LEWISVILLE, MINN.—Lewisville Farmers Elevator has under construction a 72 by 20 ft. addition to its elevator. The 40,000 bu. addition will cost $30,000 and is being built by Olson Elevator Mill Supply & Builders, Mankato, Minn. The addition is of wood cribbing covered with tin and will be as high as the elevator. Leonard Hedstrom, manager of the elevator, said the space will be used for storage and work area and will be operated with equipment of the main elevator.

FTC Hatchery Rules Hearing Scheduled

LAFAYETTE, IND.—A hearing to consider revisions in the Fair Trade Practice Rules for the commercial poultry hatchery and breeding industry will be conducted by the Federal Trade Commission at the Purdue Memorial Center, Purdue University, here October 25, it has been announced.

The hearing will get underway at 9 a.m. and is expected to last about three hours. It will precede the annual convention of the Indiana State Poultry Assn. Oct. 25-26.

The Fair Trade Practice Rules were last revised in 1956.

The Fair Trade Practice Committee of the American Poultry & Hatchery Federation met in July with a representative of the Federal Trade Commission and recommended several changes in current rules.

The American Poultry & Hatchery Federation reports it has furnished to the Federal Trade Commission a list of all hatcheries in the United States and the proposed changes will be mailed to all hatcherymen prior to the hearing. All persons interested in participating in the hearing have been invited to attend, according to APHF.

FARM PLATFORMS—Ray Bales, right, Pay Way Feed dealer from Stet, Mo., is shown receiving a supply of farm platform pamphlets from Max Straube, president of Pay Way Feed Mills, Kansas City. The pamphlets, which are being disseminated free through Pay Way dealers, present an unbiased outline, interpretation, and comparison of the farm platforms of the Democratic and Republican parties, according to Mr. Straube. Pay Way produced the pamphlet in an effort to help midwestern farm families better understand the difference between the two platforms and what each will mean in terms of a Republican or Democratic victory in November.

Champion Enrolled

DECATUR, GA. — The champion FFA broiler producer in the southeastern states, Charles N. Smith, has enrolled at Emmanuel College, Franklin Springs, Ga., it has been announced. He will attend as a recipient of a $500 scholarship presented to him by the Southeastern Poultry & Egg Assn., sponsor of the annual Broiler Production Awards program.

He is a member of the Royston, Ga., High School FFA Chapter.

The college is located near his home and he plans to commute daily and continue his broiler production program. His future plans are to enter one of the state colleges and major in some specialized field of poultry.

The youth is a leader in several youth activities and will receive the Georgia Planter Degree this fall, the highest state degree in FFA work.

Buys 2 Airplanes

ST. LOUIS—Ralston Purina Co. has entered the ranks of owners of business aircraft. The company has purchased two executive transport airplanes from Beech Aircraft Corp., it has been announced.

Three pilots have been hired to fly the company's new aircraft.

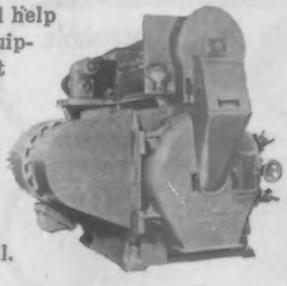
IS FIRMLY BASED ON CREATIVE ENGINEERING

Read PM/1 to get the facts about pellet mills

The pelleting of poultry, livestock and small animal feeds has become so important to the industry that a thorough understanding of the process and the equipment involved is vital to large and small feed manufacturers alike.

This Sprout-Waldron booklet covers the advantages of pelleting feeds, the history of pellet mill design, how pellets are formed, and design features of economic importance in the selection of the mill for your needs. In addition, the booklet presents the three basic Sprout-Waldron pellet mills, explains the importance of cooling, drying, crumbling, cleaning and grading of pellets and discusses the major design features of this auxiliary pelleting equipment.

Whether you are now using Sprout-Waldron pellet mills or those of another manufacturer, or whether you are contemplating putting in your first pellet mill, PM/1 is well worth the reading. It will make your understanding and appreciation of this important production tool more acute. It will help you select new equipment wisely or get the most out of the equipment you may now have on hand. Your free copy will be sent your way by return mail.



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Unique Poultry Houses Control Environment, Reduce Labor Costs

DAVIS, CAL. — Two unique Colorado poultry houses were described here during the recent Poultry Science Assn. meeting at the University of California, Davis.

Both are commercial facilities in Denver, T. E. Hartung, extension poultryman at Colorado State University, told the poultry scientists.

One of the facilities is a circular poultry house containing a multi-level arrangement of individual bird cages mounted on a large "merry-go-round" frame (Feedstuffs, June 4). The entire cage unit rotates on this frame and the caged birds have access to feeding and watering stations for only a limited time during each complete turn. Egg gathering is handled from a service elevator as the cages pass by.

The circular building has no windows. It has forced ventilation and refrigeration-type air conditioning.

The second facility is a colony cage set-up, located in rooms once used to age and cure meat in a former packing plant. The rooms are artificially lighted and each has its own forced ventilation. Birds are under almost total environmental control from the time they are a day old until ready for the cull market, Mr. Hartung said.

In both units, emphasis is on a high degree of environmental control and on keeping labor costs as low as possible.

Mr. Hartung and Dr. Robert E. Moreng of the Colorado Experiment Station worked on a consulting basis with the developers of both facilities. Mr. Hartung emphasized that the facilities are going commercial operations, and not CSU experiments.

How long hens stay in production and how such factors as egg quality, shell quality and feed conversion stack up under these close environmental controls are matters of interest to poultry scientists, he concluded.

Poultry Group Sets 3 Regional Meetings

KANSAS CITY — Dates for the three American Poultry & Hatchery Federation regional "quickie" conventions have been set, according to an announcement from L. M. Manford, federation president.

The western regional meeting is scheduled for the Disneyland Hotel, Anaheim, Cal., Dec. 2-3. The midwestern will be held at the Conrad Hilton Hotel, Chicago, Dec. 7-8. The eastern quickie is slated for Dec. 8-9 at the Benjamin Franklin Hotel, Philadelphia.

This is the second time the western meeting has been held at the Disneyland Hotel. Disneyland Park will be open during the time of the meetings.

The midwestern meeting follows the annual meeting of the Poultry & Egg National Board in Chicago.

For the third time, the eastern quickie will be a joint APHF-Northeastern Poultry Producers Council venture.

It is 10 years since the inauguration of the two-day APHF business management sessions. At least one quickie has been held each year since 1951, excepting 1953.

No southern quickie is planned this year.

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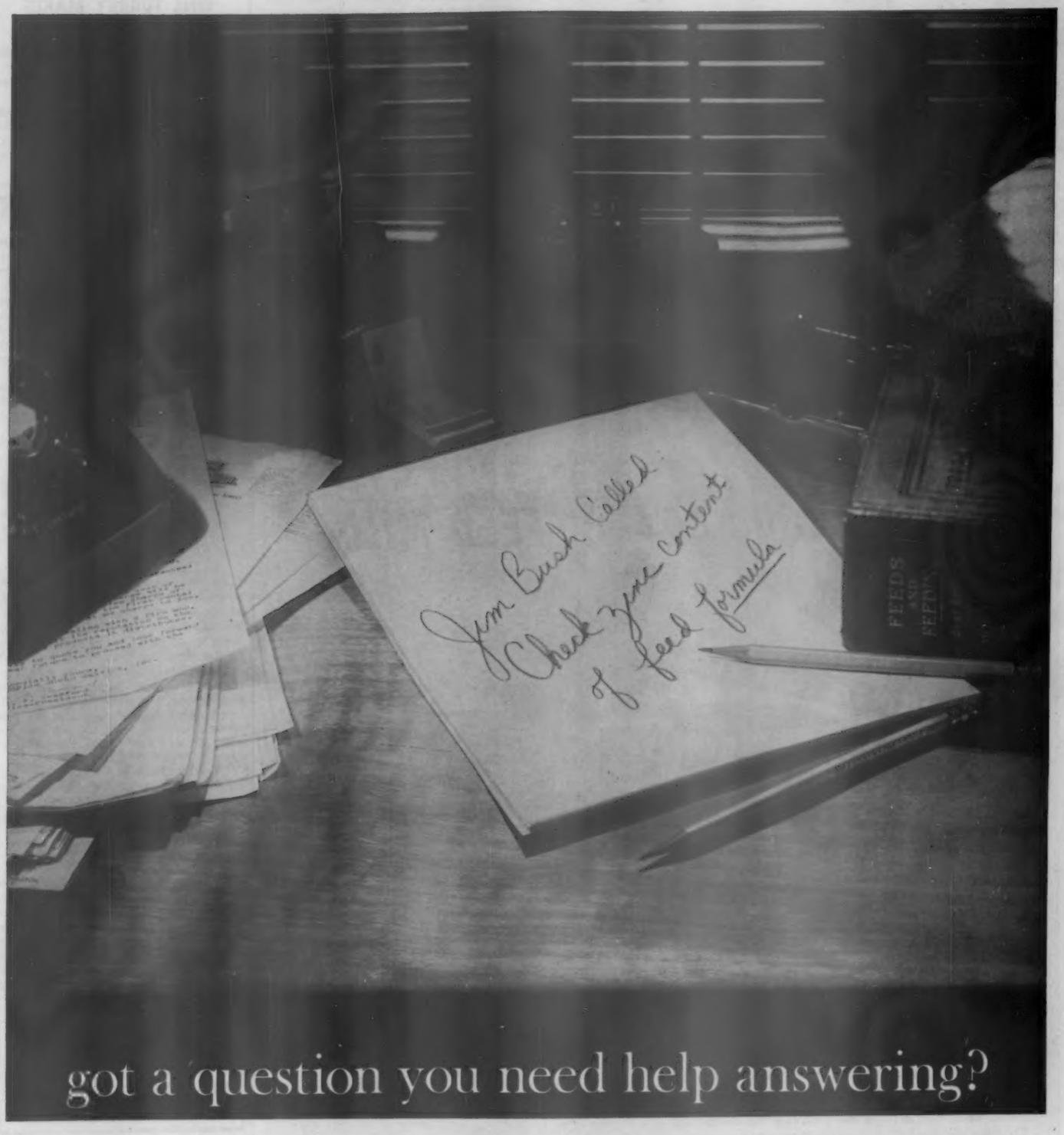

If it's about salt and trace minerals, ask Morton. You can get the right answer, fast, from the men in Morton's Nutritional Research Department. For these men follow every new development in trace-mineral nutrition. They have at their disposal the services of the world's most complete salt research laboratory, Morton's ultra-modern laboratory at Woodstock, Illinois. And they are part of a company which, for more than 30 years, has been studying and evaluating trace mineral sources and requirements for formula feeds. This assures you a dependable source of information regarding the increasingly important field of trace mineral nutrition.

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In addition to technical help on salt and trace minerals for formula feeds, Morton offers a complete line of Mixing Salts—Trace-Mineralized, Iodized and Special Mixing. And Morton Mixing Salts are available everywhere in the country. For more information about the technical help and products Morton offers, ask your Morton representative or write:

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Producers Advised of Need, Ways to Cut Egg Production Costs at Florida Meeting

ASTOR PARK, FLA.—A college economist and an industry researcher both advised the egg producer on the need to cut costs and gave tips on how to save money on the cost of producing a dozen eggs at the Florida Poultry Institute at Camp McQuarrie (Feedstuffs, Sept. 3).

Dr. Ralph A. Eastwood, extension marketing economist at the University of Florida, reported on an analysis of 1959 operations of 14 south Florida egg ranches in Hillsborough, Pasco, Pinellas and Manatee counties.

"On the average," he said, "those farms lost 7.83¢ per dozen eggs produced during the year; the five smallest farms lost 12.59¢ per dozen, on the average."

Dr. Eastwood confessed that the total cash outlay per dozen eggs produced on 14 farms was only 27.91¢, and the value per dozen eggs sold was 36.01¢. "However, when such factors as depreciation, interest on investment and the non-paid services of farm operators and their families were included, the total cost per dozen eggs produced was 43.84¢ or 7.83¢ more than income," he added.

The cost study reported on was one made by Clifford Alston, extension farm and home development specialist for the university.

Not all the 14 farms studied lost money during 1959, Mr. Alston said, but at least a dozen did so.

Comparing the five high-income and five low-income farms among the 14, Mr. Alston found these wide ranges:

Eggs per layer handled, 234 and 192; percent mortality within laying flocks, 12.00 and 16.01; dollars in eggs sold per dollar of capital managed, $2.04 and $1.11; pounds of feed used per dozen eggs, 4.44 and 5.73; annual pounds of feed per layer, 86.72 and 91.59; net cost in cents per dozen eggs, 35.51 and 48.93.

A report on the cost of pullets raised for flock replacements was included, with those costs also showing a wide range.

Dr. Wilhelm's Talk

Dr. L. A. Wilhelm, poultry development and market research director for Quaker Oats Co., said that a dozen eggs should be produced at over-all cost (including farm depreciation, interest and repairs) somewhere between 25.7 and 34.3¢. The main variables are those on cost of the individual bird and cost of feed, he added.

"Pullet costs can be lowered by housing more than 90% good pullets, by quantity buying (perhaps combining orders for the entire year) and by raising pullets on less than full feed," said Dr. Wilhelm. "Each 10¢ saved per pullet housed is one-half cent per dozen eggs earned.

"Feed costs vary widely with price, kind of feed, method of manufacture, feed efficiency, total production per bird housed."

Feed efficiency is a measure of both the care taken in avoiding waste of feed and the nutritional efficiency of the feed, he noted. Saving a half-pound of feed per dozen eggs (from 5-4.5 lb. of feed) is the equivalent of 50 doz. eggs per ton of feed, he added.

"Bulk feed," Dr. Wilhelm said, "instead of bagged feed, can save 16¢ per hen or 0.8¢ per dozen eggs. Pelleted feed, where available at the same price, can save 12¢ per hen per year or 0.6¢ per dozen eggs due to greater feed efficiency.

"Feed wastage in laying houses can cost as much as 30¢ per hen per year," Dr. Wilhelm said. "Eliminating this could earn 1½¢ per dozen eggs."

ONE TURKEY MAKES CLUCK OF THIEF

SPRINGDALE, ARK. — One little turkey makes a big difference.

If you don't believe it, ask William Joseph Evans, Jr., of Salem, Mo.

Mr. Evans was charged in municipal court with grand larceny in the alleged theft of three live turkeys from the Wilson & Co. processing plant here.

Jim Evans, municipal judge, ordered Mr. Evans bound over to the fall term of Washington County Circuit Court for trial.

The judge added that the third bird in the case made quite a difference in the charges filed against the Missourian.

He said the theft of two turkeys would have been petit larceny, punishable by a fine. But the theft of three turkeys is a felony punishable by a maximum sentence of five years in prison.

Incidentally, the turkeys will never know what happens to Mr. Evans: They have already gone on to their rewards.

ELEVATOR HOLDS OPENING

CANBY, MINN.—Tri County Feed Co., successor to Erickson's Elevator here, has held an open house in its expanded quarters. Since the elevator was purchased by Dr. Marvin Thorpe and Bennie Madsen, partners in the Canby Hatchery, an addition has been built and new equipment installed.

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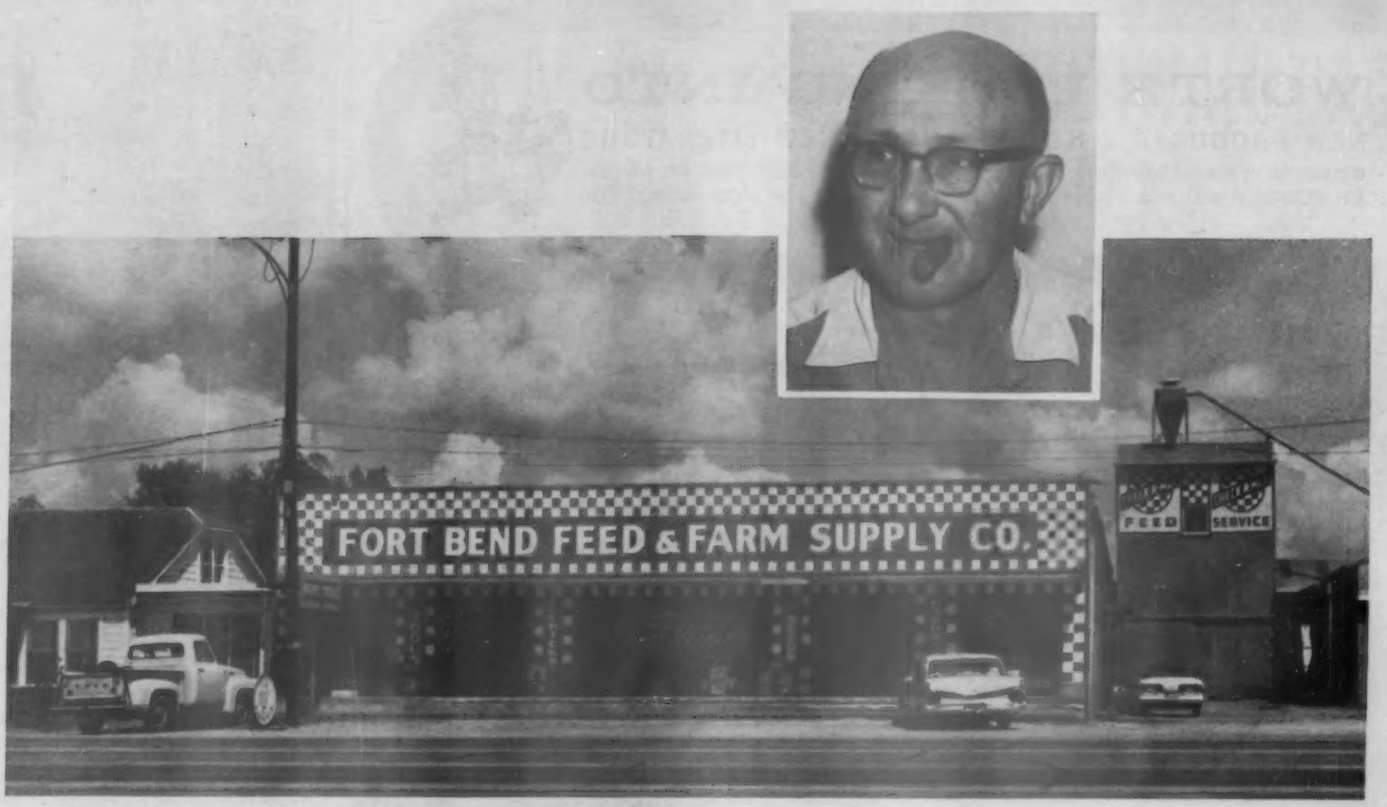

Here's a Service Center that scores high in volume because it ranks high in service. Mr. Reichle has earned the "President's Honor Council" certificate, a top honor for a Purina Dealer.

"At our Purina Service Center we help farmers every way we can"

—says E. H. Reichle, owner,
Fort Bend Feed & Farm Supply, Rosenberg, Texas

For a quarter of a century, Purina Dealer Reichle has worked to promote diversification of agriculture among cattlemen, cotton farmers and rice growers. That is one example of the service his organization is performing.

In line with his policy, Dealer Reichle supported soil conservation because Fort Bend County farmers needed it. For that same reason, he has installed Check-R-Mix Service.

Caged hens, colony hen operations, calf creep feeding and "Pig Parlors," introduced by the Fort Bend Feed and Farm Supply, all have added to farm income. The Dealership put on the first cattle-spraying demonstration in the county and has brought numerous other features of modern farming to the area.

The growth of Fort Bend Feed and Farm Supply is proof that *service is selling.*

* * * *

What does Gene Reichle think of the Purina Franchise? "We never made any money out of the feed business until Purina gave us a lift," says the Dealer. "Purina Salesman Lawrence Dube works with us as a 'partner,' training employees, holding meetings with farmers, making on-the-farm sales, and bringing us good business practices and reliable research findings. He gives us the right information."

"Purina display materials dress up the store and help us sell," says Clarence Reichle, inside salesman for the Dealership. A Purina-trained outside sales and service man spends most of his time on the road.

Modern, push-button Check-R-Mix Service was installed at Fort Bend Feed and Farm Supply because farmers and ranchers needed it. Harry Goger is getting ready to Check-R-Mix local grains with Purina Concentrates.

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DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7115—Pig Starter Display

Pay Way Feed Mills, Inc., announces a point-of-sale display designed to aid the sale of its "Pig Slick" pig starter to hog raisers. The display is filled with wrapped cinna-

mon candy. The box front bears a full-color reproduction of the Pig Slick bag with the names Pig Slick and Pig Starter being changed to "Kid Slick, A supercharged Kid Starter." The campaign is being backed by radio, TV and farm paper advertising. For details, check No. 7115 on the coupon and mail.

No. 7118—Lysine Supplement

Addition of a livestock-poultry feed grade lysine supplement to its line has been announced by Merck Chemical Division, Merck & Co., Inc. Called "Lyamine," the product is of a uniform standard, controlled potency. The lysine is 100% available, and its potency is based upon the amino acid itself, the company says. It will be a 20% lysine product, and the lysine price will be approximately 40% below that of a year ago, the company says. The new amino acid supplement will be marketed at 55¢ lb. Merck officials said this means availability of lysine at a price favorable for use in livestock and poultry rations. The supplement will be sold in 50-lb. bags. For complete information, check No. 7118 on the coupon and mail.

No. 7123—Swine Mixing Salt

Morton Salt Co. has announced a new trace mineralized mixing salt for swine. The firm said it has been specifically designed to supply the trace mineral requirements of all swine. It includes a high level of zinc to prevent parakeratosis. Morton Swine Mixing Salt contains 0.800% zinc, and when mixed in complete swine feeds at the level of 10 lb. per ton, it will supply 40 parts per million of zinc. It has been generally established, Morton said, that this level of zinc will protect swine from parakeratosis if the calcium content of the feed does not exceed 1%. All of the essential trace elements in the product are said to come from nutritionally tested, water insoluble mineral compounds. These compounds are blended with the salt, together with a new anti-segregation treatment designed to prevent the natural tendency of these compounds to separate out during handling. For further information, check No. 7123 on the coupon and mail.

No. 7116—Storage Bin Leveler

Lennox Industries, Inc., has added a grain leveler to its line of equipment. Known as the "Spreads-All," the unit is driven by a ¼ h.p. engine. It mounts in the top of the grain bin

and fills the bin evenly by spreading grain over the entire bin during the filling operation, the company says. The unit eliminates the need for hand scooping of grain, eliminates trash pockets, and when a fan is used on the bin during the filling operation, it acts as a grain cleaner by permitting the chaff and dirt to be blown out the top, the company says. Motor speed is adjusted through a variable pitch pulley by means of an adjusting arm which locks at the top. Adjustable vanes on the bottom spreader wheel adapt the unit to different-sized bins while raising the center disc increases the capacity. For details, check No. 7116 on the coupon and mail.

No. 7124—Mobile Management Bulletin

"Long on Profits" is the title of a bulletin outlining a training school program in mobile feed milling management given operators by Seco, Inc. According to the company, the program extends practical and advance-type guidance. Purchasers of Seco mills send operators to a three-day training program which features feed marketing, mechanical use of mobile equipment, management of the operation and a session on route set-ups and accounting. Usual classes consist of 14 to 20 persons. The owners drive away the new units after schooling is completed. Field testing is included in the school. To secure a copy of the bulletin, check No. 7124 on the coupon and mail.

No. 7105—Bulk Feed Bins

Bulk feed bins have been added to the Stormor line of grain storage and handling equipment produced by Fremont Manufacturing Co. The bins, made of heavy gauge, galvanized steel, are offered in a range of sizes from 2 tons to 30 tons, with a choice of two diameters—6 ft. and 9 ft. Features listed by the company include all seams and boltheads securely

sealed against moisture, 17 in. discharge opening, 22 in. full opening and center or side draw. Pneumatic loading accessories and auger unloading and transfer systems are available. For details, check No. 7105 on the coupon and mail.

No. 7121—Level Control Bulletin

Flo-Tronics, Inc., announces the availability of a catalog sheet on its "Fail-Safe" models L400 and L400A material level controls. The catalog sheet contains specifications and illustrations on both models. According to information contained in the sheet, the Model L400 is an electronic unit for determining the presence or absence of material at a selected level in a bin, hopper, storage tank or similar container. A sensing vane or paddle controls the generation of an electrical signal. An electronic circuit increases this signal sufficiently to operate electrical contacts which may be used to control equipment or to operate indicators. Should any portion of the unit fail, the control contacts operate automatically to establish the same control circuit condition obtained during normal operation when the material passes the selected high or low level. In this manner, the unit will always energize associated equipment to correct the unsafe condition. For copies and more information, check No. 7121 on the coupon and mail.

No. 7106—Feed Holding Bins

A bulk feed holding bin with a hoppered bottom and steep-pitch roof has been announced by Behlen Manufacturing Co. The bin has a 27 in. filler cap which, along with the steep-pitch roof, allows complete filling without hand leveling, the company says. The roof cap is hinged. The bin

is available in three sizes—340, 465 and 590 cu. ft. (or about 270, 370 and 470 bu.). All sizes are 7 ft. 4 in. in diameter. The hoppered bottom has a 16 in. discharge opening. Optional equipment includes augers either 4 in. by 12 ft. or 6 in. by 16 ft. Also available are ladder rungs which bolt directly to the bin and an unloading boot. For details, check No. 7106 on the coupon and mail.

No. 7117—Farrowing Stalls, Kit

W. D. Hines Co. announces a line of farrowing stalls and a special do-it-yourself hardware kit with plans. One of the stalls, called the "Save-All" farrower, guarantees that there

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- ☐ No. 7105—Bulk Feed Bins
- ☐ No. 7106—Feed Holding Bins
- ☐ No. 7115—Pig Starter Display
- ☐ No. 7116—Storage Bin Leveler
- ☐ No. 7117—Farrowing Stalls, Kit
- ☐ No. 7118—Lysine Supplement
- ☐ No. 7119—Booklet on Piperazine
- ☐ No. 7120—Poultry Feed Flavor
- ☐ No. 7121—Level Control Bulletin
- ☐ No. 7123—Swine Mixing Salt
- ☐ No. 7124—Mobile Management Bulletin

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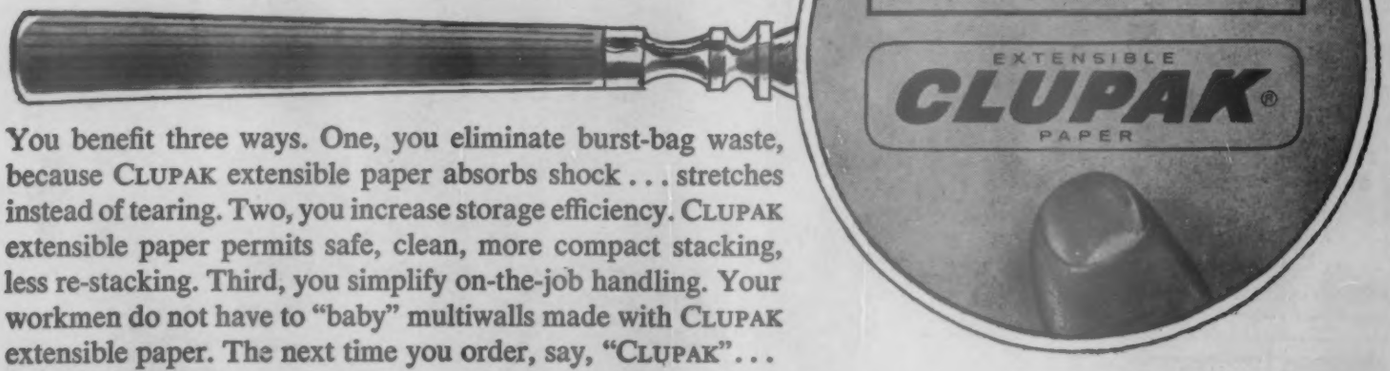

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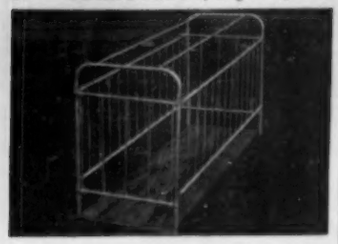

will be no crush losses at farrowing time. It has an adjustable floor and pig box. The Hines conventional farrower is of all metal construction and is an economy model. The special hardware kit with plans contains all the material necessary for the building of a Save-All unit. Details can be secured by checking No. 7117 on the coupon and mailing.

No. 7119—Booklet on Piperazine

Jefferson Chemical Co., Inc., has made available a booklet on the use of piperazine for worm control in swine and poultry. The booklet discusses damage done by internal parasites and how they can be controlled by proper use of piperazine compounds. The compounds are safe, the booklet says, and palatable and can be applied by any common method. They are effective against the large roundworm and nodular worm of swine and the roundworm of poultry. For copies of the booklet, check No. 7119 on the coupon and mail.

No. 7120—Poultry Feed Flavor

Flavor Corporation of America has announced the commercial availability of "Peckmor," a chicken and turkey feed flavor developed after a two-year research program at an agricultural college. When mixed at the rate of ½ lb. per ton in starter, grower, medicated and stress formulas, the company says, the product has produced a consistent increase in feed intake, faster gains and improved conversion ratios. Complete data is available by checking No. 7120 on the coupon and mailing.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs

No. 7069 — Chain poultry feeder, James Manufacturing Co.

No. 7070 — Steel cable socket, Brooks Machine & Mfg. Co.

No. 7071 — New bulk body model, Winger Manufacturing Co.

No. 7072—Portable sprayer, O. W. Kromer Co.

No. 7073—Antibiotic bulletin, Abbott Laboratories.

No. 7074—Self-unloading feed body, Baughman Mfg. Co.

No. 7075—New UGF source, Chas. Pfizer & Co., Inc.

No. 7076 — Moisture tester check, Seedburo Equipment Co.

No. 7077 — Power shovel hook, Brooks Machine & Mfg. Co.

No. 7078—Patented feeder, Day Co.

No. 7079—Antibiotic bulletin, Abbott Laboratories.

No. 7080 — Grain expander, The V. D. Anderson Co.

No. 7081 — Utility body bulletin, Baughman Manufacturing Co.

No. 7082—Enzyme hydrolyzed casein, Amber Laboratories, Inc.

No. 7083 — Batch mixing muller, Frederic B. Stevens, Inc.

No. 7084—Organic digester, Ryter Corp.

No. 7085—National parts service.

No. 7086—Egg color film, Hess & Clark.

No. 7087—Vitamin E Product, Merck & Co., Inc.

No. 7088—Trace Mineral Salt, Morton Salt Co.

No. 7089—Bulk truck control lever, Productive Acres Manufacturing Co.

No. 7090—Packaging guide, Bemis Bro. Bag Co.

No. 7091 — Truck scale, Toledo Scale, Division of Toledo Scale Corp.

No. 7092 — Mixer, blender article, Sprout, Waldron & Co., Inc.

No. 7093 — Elevator construction booklet, Weitz-Hettelsater Engineers.

No. 7094 — Bulk feed bin bottom, Brock Manufacturing, Inc.

No. 7095—Terramycin vitamin crumbles, Chas. Pfizer & Co., Inc.

No. 7096 — "Twin-Pack" Poultry medication, Dr. Salsbury's Laboratories.

No. 7097 — Grain dryer, Daycom, Inc.

No. 7098—Moisture proof bag, Abbott Laboratories.

No. 7099—Poultry record chart, Hess & Clark.

No. 7100—Baby pig feeder, Doughboy Industries.

No. 7101—Equipment line folder, A. T. Ferrell & Co.

No. 7102 — Grain inspection light, Seedburo Equipment Co.

No. 7103 — Long cone collectors, Archer-Daniels-Midland Co.

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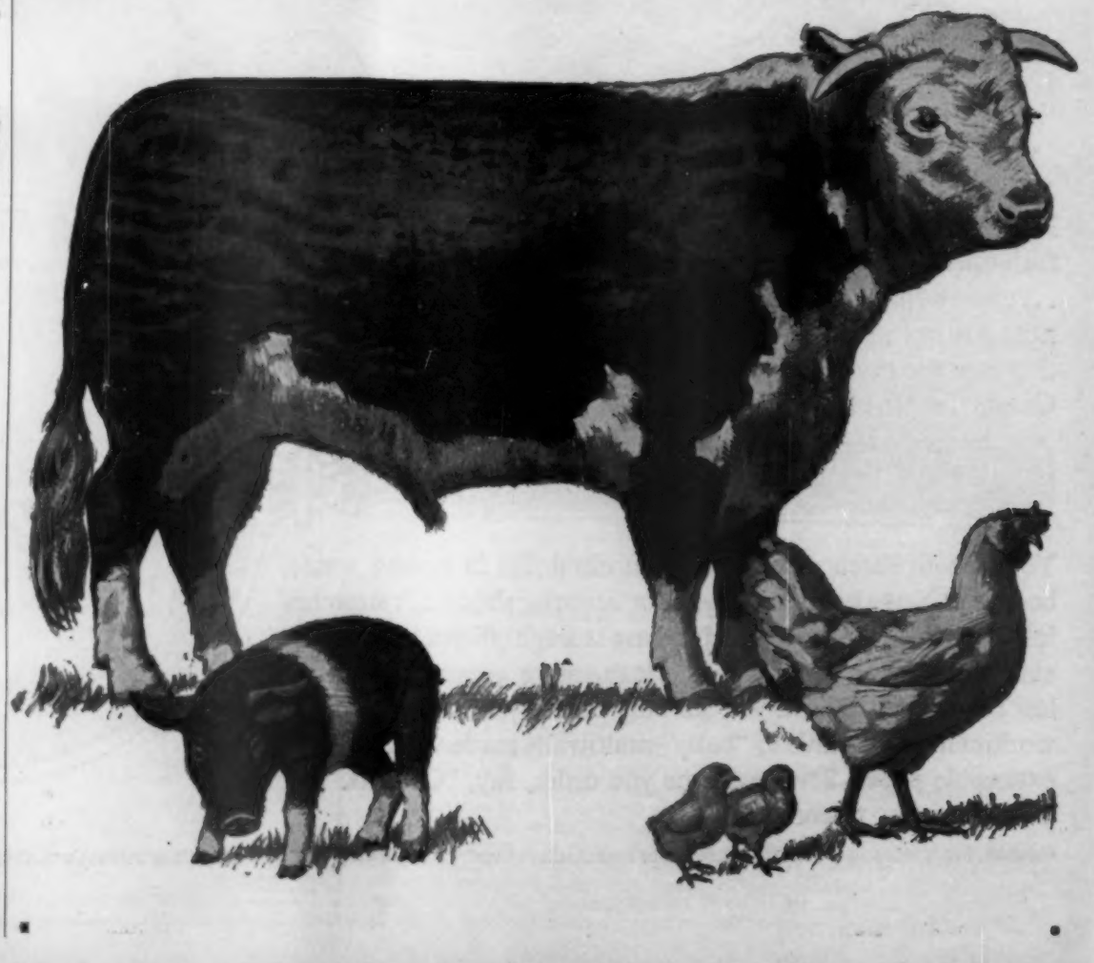

National Broiler Council Planning Autumn Sales Push

RICHMOND, VA. — Sound nutrition, high protein and low calorie are the by-words of National Broiler Council's autumn program aimed at reaching millions of consumers with the theme "Chicken, the Food of the Future and the Calorie-Conscious Present." Geared to the more relaxed and slower pace of autumn, NBC's consumer education program will attempt to overcome the seasonal slump in chicken consumption which in years past has reduced sales up to 40%. All media of communications will be used to convince Mrs. Consumer that chicken, the picnic and barbecue favorite, is equally suitable as an indoor treat, NBC reports.

While the new approach subordinates the "thrifty and versatile" approach previously emphasized to consumers, it marks the first big educational drive aimed at informing the public of chicken's "built-in" nutritive values.

The program will reach its peak in October when consumers will be briefed via the editors of more than 6,700 metropolitan and hometown newspapers, NBC said. Copy and photographs will make these points:

(1) Chicken has fewer calories than any other meat (115 per 3-ounce portion vs. 375 per 3-ounce portion of broiled steak and 245 for broiled hamburger).

(2) Chicken is lower in fat than any other meat.

(3) Chicken breast meat is higher in protein than beef, veal, pork, lamb.

(4) It is a good source of vitamin B_1, rating above beef, pork, lamb and veal.

(5) In terms of cost per pound of edible meat, chicken remains the homemaker's best buy.

On radio, an interview show will carry the high-protein, low-calorie message to 200 stations and an additional 2,000 other stations will receive suitable broadcast materials through radio wire services.

Television stations will be covered by materials supplied to the 100 local commentators who conduct homemaker shows on television, according to NBC.

A tie-in with Cling Peach Advisory Board will result in a "peaches and chicken" recipe in fall issues of Ladies Home Journal, McCall's and Saturday Evening Post. In return, NBC will highlight hot cling peaches in its NEA wire service food column which goes to 900 newspapers and a color feature and editorial reaching the 35 metropolitan newspapers which use color on their food pages.

NBC said it hopes to "bring chicken indoors" by making all promotional materials reflect the lighter autumn eating habits of the nation. Simultaneously, the association hopes to avert the seasonal slump in chicken consumption while providing the public with tasty nutritional recipes geared to cold-weather living.

Hens Laying Better, But Egg Flock Profits On Slide in Minnesota

ST. PAUL—Even though hens are laying better than ever, returns from farm laying flocks have dropped sharply in Minnesota. As a result, many farmers have dropped their poultry operations, say G. A. Pond and Dr. S. A. Engene, University of Minnesota agricultural economists.

They found that in the Southeast Minnesota Farm Management Assn., return over feed cost rose from 99¢ per hen in 1930-34 to $1.46 in the 1940-44 period. In 1955-58, however, the return was down to $1.39 and in 1959 was only 39¢.

In the southwest association, the return figure fell from $1.72 in 1940-44 to a mere 9¢ last year.

Yet, annual egg production jumped 4-5 doz. per hen during the last 15 years in both associations.

The major reason for the low return over feed costs has been the small rise in price of eggs, compared with other farm products. (Return over feed cost is what the farmer has left to pay for labor, shelter and equipment, other cash costs, and to provide a return on his investment.) Nor do the economists hold out much hope for this situation to improve in the near future. They feel that only farmers with high efficiency will be able to keep farm laying flocks.

Because of changing price levels, the economists found it more meaningful to compare return over feed cost with other items. For example, in 1930-34 the average return over feed cost per hen paid the wages of a man for about five hours.

The typical farmer then spent about two hours per hen, leaving a value of three hours per hen as a return for his other costs. Since 1950, the return over feed cost has been equal in value to two hours or less of labor.

Therefore, only farmers with high labor efficiency or higher-than-average returns per hen have received good returns for labor and other costs.

Sales Manager Named

GREENVILLE, S.C.—C. V. Click, president of Click & Company, Inc., here, has announced the appointment of Roy T. Duggan, Jr., as sales manager.

Mr. Duggan, who was with the Rumford Co. for 20 years, will be in charge of the Click firm's sales of poultry and livestock feeds, and dog food in North Carolina, South Carolina and Georgia. He and Mrs. Duggan will continue to make their residence in Greenville, it was stated.

NEW HONEGGER DEALERS

FAIRBURY, ILL. — Four dealers have announced that their firms will handle the complete line of products manufactured by Honeggers' & Co., Inc., including livestock and poultry feeds, Honegger layers and farm buildings and equipment. They are: Chester B. Brown Co., Lingle, Wyoming; Ward's Feed & Supply, Blair, Neb.; H. A. Whest, Ogallala, Neb., and Moore's Farm Supply, Wapello, Iowa.

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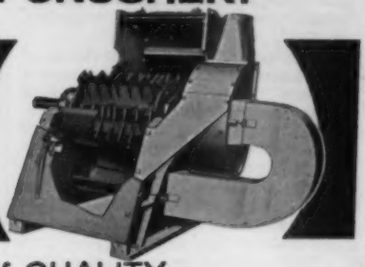

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On-the-Farm Mixing Competition Varies

Feed men feel most farmers will see it pays to continue using products and services of the feed industry.

By Al P. Nelson
Feedstuffs Special Writer

Feed men know that there is a tendency for some farm operations to get bigger and that in such cases the owners or tenants may consider installing their own feed processing equipment. By such a process, some of these owners and tenants of large farms think they can save money in one way or another.

In travels through 12 middle western and eastern states in 1959 and 1960, I found that many feed men are not yet too worried about on-the-farm mixing competition, so to speak. These feed men say that it's only natural for the big feeders to try such on-the-farm mixing. They predict that not all of them will stick to it.

Twenty or thirty years ago when a small farmer came to a feed store and looked at the price of a bag of concentrate, he shuddered, went out and bought a small mill and installed it on his farm and ground his own feed. He did not keep an account of his labor, or even of his materials sometimes. And he was not concerned too much with uniformity of mix. Feed ingredients just mixed any old way was what he wanted. He figured his poultry, hogs and cows could balance it through eating it.

Today, feed men in many states tell me, the small farmer is not greatly interested in buying and using his own mixer. Or, in some cases he may do some of his own grinding, but will let the stationary mill in towns or the mobile mill do the bulk of his grinding and mixing.

I have had numerous mobile mill operators tell me that farmers for whom they grind right on the farm, tell them they have small mills, but just don't have time or labor to use them. They prefer a mobile mill service, where the farmer can go on tilling his fields while the mobile mill grinds and mixes and puts the product into bins or feeders.

Stationary mills, too, with grain bank, grain hauling, bulk delivery service, also tell me that farm labor cost is so high, that many farmers quickly realize it pays them to have their feed processed elsewhere.

Left out of this conclusion, of course, are some of the large feeders who figure to get back the investment of a farm feed processing plant over a five to ten year period.

A farm and home expert in Illinois has said that there are three classes of farmers today. The first class of farmers is that where the members work in a town or city, farm on a small scale on the side. They may have up to 120 acres. The second class is the farmer who has from 240 to 480 acres. A single operator, he tries to manage it all himself.

The third class of farmer is one who has a large unit, with employed labor and often supervised by a manager.

The first two classes of farmers usually will not buy and use a farm mill. Such farmers just do not have the time for such an operation, and do not wish to make a big investment in machinery and ingredients. They will want to deal with the mobile mill owner or the stationary mill in town, or even with the feed store owner who has no processing equipment.

How Big?

How big will the big farm operators get? Will they reach a point where absentee ownership and a large number of employed labor will make costs very, very heavy and discourage further expansion?

There are many feed men and farm experts who think so. Many point to the frequent changes in managership of some of these large farm enterprises as an indication of a basic weakness. What some of the smaller feed mill executives are trying to say is that there will always be numerous large farm enterprises, but they will not take over the majority of the farm land, nor the largest part of the poultry and livestock industry.

Some dealers point to the intense interest in integration three to four years ago when many responsible people predicted that all poultry and livestock production would quickly become integrated. Nowadays one hears little about hog integration operations. Egg marketing plans involving integration have s h o w n only sporadic activity compared with what some expected.

Therefore, many feed mill operators with whom I talked believe there will be sufficient business for alert feed men to get on an independent basis for the next five years or more. Feed mill operations will need to be streamlined and service perfected, but this can be done, several feed men have told me.

Anyone traveling about the Middle West can see an increasing number of feed dealers who raise broilers, hogs and cattle in sizable numbers, thus assuring their custom mills or brand mills a certain volume of business. Then these mill men go out and sell the rest of their output to farmers.

Some independent mills, making registered feeds, too, are going to big feeders and offering to sell them pelleted, complete feed on a large tonnage basis, at a price which discourages the large feeder from producing feed on his own premises with a modern feed plant.

The success of this type of feed mill operation indicates that in the future, the feed business of all large

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feeders is not going to be processed right on the farm.

The large feed farm mill faces the problem of high equipment costs, storage facilities, the necessity of purchasing ingredients in large volume to get lower prices, etc. All this turns the large operator's mind from his primary purpose — raising poultry or livestock on a large scale. Such distraction with an allied enterprise could, in many cases, cause a farm operation of this type to lose money.

Many feed men with whom I have talked concede that some farmers, small and large, will continue to buy, install and use farm mixers. But the majority of farmers will continue to use mobile and stationary mill service provided by an outside firm. And when the farmer begins to get accurate costs concerning his farm mixer operation—including full cost of labor used—he may often have a sad awakening.

Feed Man's Suggestions

One miller who has studied the situation offers these suggestions on farm mixing:

1. The farmer-mixer is no nutritionist. Mixing his own feed, he is not likely to get the best formula available for his poultry and livestock. He has no way of testing his pet formulas against those of other successful operators.

2. The farmer-mixer is inclined to use guesswork in mixing or adding ingredients. He's not as careful as a custom mill operator. Such guesswork will affect the nutrition and economy of his ration.

Also, the farmer, without a reliable feed man to advise him, may switch rations considerably. He is apt to be influenced by what rations another farmer uses. However, when a reliable feed man works out a feed management program with a farmer, he counsels him on a prolonged test of the ration, figuring exact costs and production, etc. Many farmers need this sort of steady counseling, particularly in periods when poultry and livestock prices may fluctuate and farmers are tempted to try drastic methods to lower costs.

3. The farmer-mixer can compare his own rations only with those of a few neighbors. When he works with a reliable feed man, he can compare his rations and production with those of 100, 200 or more farmers in the area. The alert dealer knows what poultry and livestock feeding methods are most profitable. He passes this information on to farmers at no extra cost per bag of feed. Many farmers realize this—they want to continue to have the feed dealer as their partner in poultry and livestock operations.

4. The farmer-mixer, if he wishes an economical, nutritious mix, needs to buy his materials in large quantities to get reasonable costs. But most farmer-mixers do not wish to invest enough money to buy in large amounts. They will continue to buy small quantities, thus erasing most or all of the cost advantages of processing their own feed.

Ingredients used in many balanced feeds today are naturally costly and the farmer cannot afford to use such ingredients unwisely. If he does, it will cost him money.

5. The farmer-mixer needs to consider the end result of his on-the-farm feed processing, rather than the exact feed processing cost. What a penalty he is paying in poultry and livestock production if he uses a feed program which is not the best he can get! Any guesswork or careless mixing or determining of formulas will be reflected in egg production, hog and cattle gains, etc. The alert farmer should check the entire feed operation—not just the feed cost, states the feed miller.

"In the face of increasing competition from proponents of farm mixing," said one custom miller, "we independents need to do a better selling job to farmers. In many ways we are the servants of farmers today—but that is not the biggest selling factor. We need to be good salesmen. We need to show the farmer—and remind him of it constantly—that we are trained nutritionally, to help him get the utmost from his feed dollar. With our records and experience we certainly can show him we can help him spend that feed dollar more profitably for him, than if he tries to spend it all by himself. Our knowledge, our experience, our counsel and help, are worth much to the feed customer. We've got to make him realize this, and when we do, we'll get more of his feed business."

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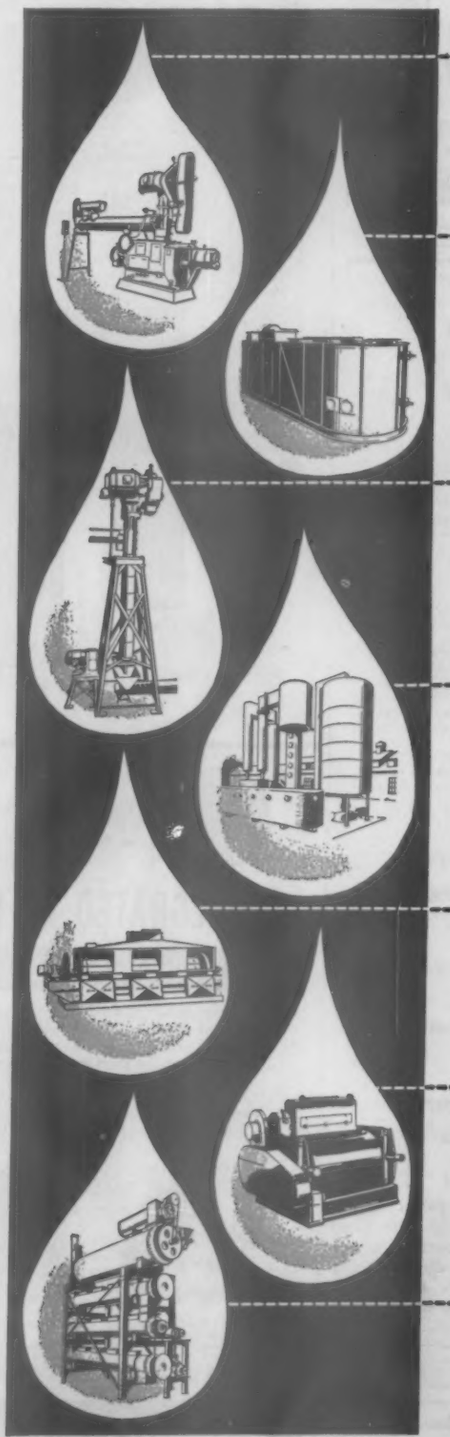

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UP OR DOWN

By Dr. Leonard W. Schruben, Agricultural Economist, Kansas State College

Egg Price Patterns

Readers of this column are frequently reminded that no one knows for sure what the future will bring. Nevertheless, you are always making plans for operating your farm feed business. You must assume something about the level of prices your customers will receive, even if it's just a guess.

While history doesn't always repeat exactly, it is our best guide as to what to expect in the future. We have put together some information on how egg prices in Kansas have changed from September to three following months later in the fall and winter.

The percentage of times prices have gone up, stayed the same or gone down from September to November to January and to March are shown in the accompanying graph.

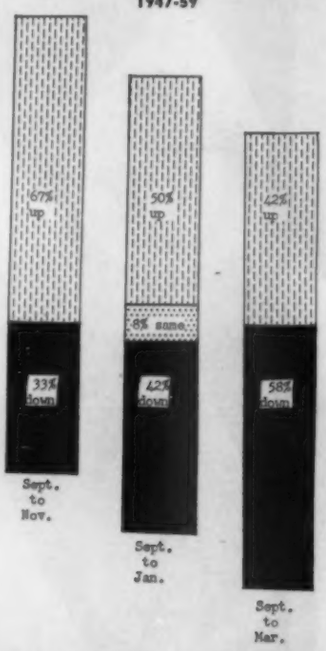
Here is how to read the exhibit: The top part of the bar in the first column, for example, indicates the percentage of times that prices went up. In the case of the September to November change, it was 67%. The bottom part of the bar shows the percentage of times that prices went down from September to November. As you can see, it was 33%. Changes from September to the other months in the graph are read in the same manner.

You will notice that egg prices have gone up from September to November about two years out of three since 1947. Almost the reverse situation has prevailed over the same years from September to March, as you can see from the third bar of the graph.

Kansas farm prices of eggs were used. This includes all kinds. Quality eggs could have a somewhat different pattern. You will notice that high quality eggs have been bringing a substantial premium. Marketing a quality product makes sense, and a good egg grading law to help maintain standards is important.

What about prices this fall? Kansas State University economists who keep an eye on egg prices expect 12-15¢ per dozen above last year's fall prices for top quality. Farm run and low quality eggs won't compare so favorably. Mid-winter declines after fall peaks are expected to keep quality egg prices well above those of last winter.

Eggs: Kansas Farm Price Changes 1947-59



Farmers Get Storage Ready for Big Crop

RALEIGH, N.C.—Tar Heel grain farmers are working against time to provide storage for the big grain crop to be harvested in the next couple months, according to E. S. Coates, extension engineer at North Carolina State College.

"New farm storage facilities are rising in unprecedented numbers throughout the commercial corn producing areas," Mr. Coates declared. "Livestock and poultry producers are also taking steps to provide better grain facilities so they can buy grain for the year at the low harvest prices."

He pointed out that for many years the harvest price for corn in North Carolina has averaged 29-30¢ bu. below the price later in the year. This margin is sufficient to pay for a modern farm grain drying and storage facility in three to four years.

"Indications now point to at least five million bushels of new farm grain storage in North Carolina this year," Mr. Coates said. "The fact that practically all these new facilities are equipped with drying or with aeration equipment is a sign that farmers are determined to keep this grain in top quality."

Building Steel Bins

AUGUSTA, MAINE — The Weld-Well Co., Bath, Maine, is erecting six 64-ft. high steel storage bins for the Lipman Poultry Co. here.

Robert W. Donnell, the firm's manager, said he expects the storage bins to be completed this month. Weld-Well built a 76-ft. high conveyor system for the poultry firm.

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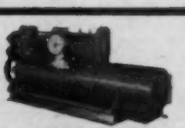
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Study Egg Promotion For North Carolina

GREENSBORO, N.C. — Specific recommendations are expected this fall on a North Carolina egg industry promotion program, following a meeting on the matter held here. The program will be financed through an assessment of 1¢ per dressed hen on commercial and hatching egg producers.

Under consideration is a plan to use a seal for identifying North Carolina eggs. A design is to be prepared by the State Conservation Department, State Agriculture Department and North Carolina State College.

At the meeting here, Curtis Collier, Atlanta, southern representative of the Poultry & Egg National Board, said his organization is seeking to develop new uses for eggs.

Dr. E. W. Glazener, former head of the poultry department and now director of instruction at the North Carolina State College School of Agriculture, said plans for the promotional program are "shaping up very nicely" and special plans probably will be announced in the near future.

The 1¢ assessment was approved by a substantial majority of producers in a referendum last spring.

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TRENDS IN FEED PLANT DESIGN

Dictated by changes in agriculture and the feed industry, the design of feed mills has continued to change, with a trend in recent years toward smaller and, frequently, more specialized plants.

By J. D. Johnson
General Mills, Inc.

Many feed mills being built today are small, efficient, low-cost, specialized and, frequently, all-bulk plants. In reaching this stage of design, the mill has gone through several phases which have been dictated by needs of the feeder and methods of serving him.

It might be said that feed plant design is another example of "Necessity is the mother of invention." As needs have changed, so have feed manufacturing plants.

It seems advisable to review developments over the past years which have seen the mill design changes that are now apparent.

This discussion deals primarily with mill design as it might be applied by a larger-type feed organization. However, certain aspects relate to other organizations also.

Of course, the different phases are not entirely clear cut, and there are variations within a particular phase or in the use of a certain type of plant. But, in general, we will go over the broad phases of plant design which have evolved. For review, we might start with the period beginning after World War I.

PHASE 1—TERMINAL PLANTS: From the close of World War I to the end of World War II, the emphasis among feed manufacturers often was on large mills. During this time, feed was distributed to the ultimate user largely through dealer organizations. Farms were generally diversified, having small flocks of chickens, a few milk cows, some hogs, etc. In many sections, the farmer was relying on local grains and products of the farm with some commercial supplements.

TRANSITION PLANT—Here is an example of a "transition" plant, built to help meet changes in feed formulation, production methods, etc.

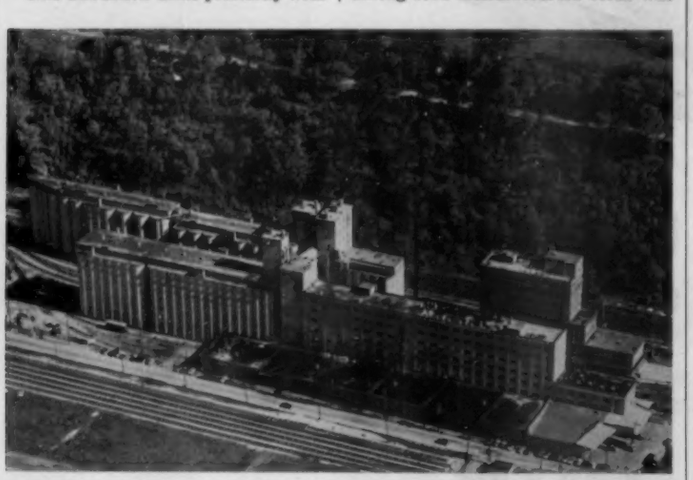
To effect the lowest cost in production and distribution of feeds, the plants were constructed in large cities near the source of supply. The mills were normally found in cities such as Buffalo, Chicago, St. Louis, Fort Worth, Minneapolis, etc. Major ingredients—such as bran, midds, cottonseed meal, linseed oil meal, meat scraps—were produced in these large cities. Other items—such as fish meal, beet pulp, salt, limestone, cod liver oil, molasses — were used in relatively small amounts and could be transferred over longer hauls. The idea was to concentrate as much machinery in one location as possible and produce feed at the highest rate. Many of the items were handled in bulk, but a great many of them were shipped in sacks and dumped at the time they were received at the mill.

These mills were nearly all of a continuous mixing design. This meant that there was one feeder for each ingredient used for each line constructed. Feeders were either gravimetric or volumetric. Due to the fact that there were only a few feeds being produced at this time, one line could be set up and run for hours or days without making a change. The variations in the feeds were few and small and the rate of production was high. It was not uncommon to have mills produce from 1,500 to 4,000 tons per day, and this operating day was usually no more than 16 hours.

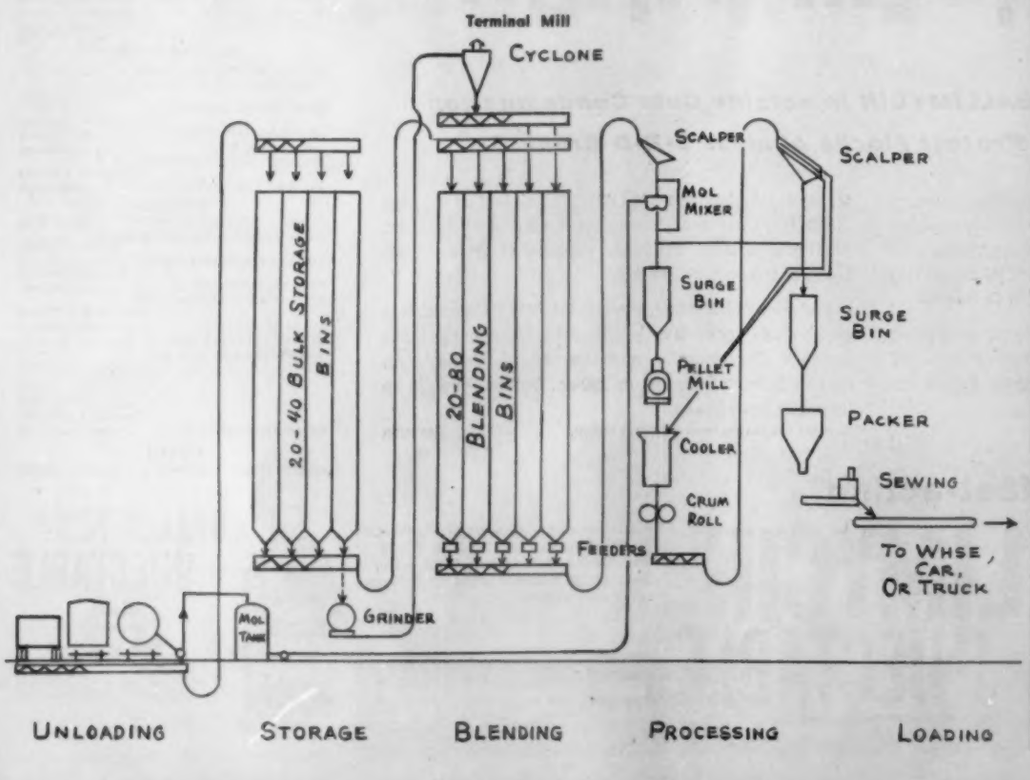
Bulk feeds had not been heard of at this time and the feed was all sacked—in 100-lb. cotton and burlap sacks or, as time passed on, in prints and multiwall papers. Some of the plants dispensed with warehouses, and the production was loaded directly from the packing line to the railroad cars. In this period, it was not uncommon to load only one type of feed per car. In fact, I have seen a picture of an entire trainload of one kind of feed produced during this era. As time went on and the number of feeds increased, it became necessary for floor stocks to be developed to eliminate as much as possible the number of changes in the mixing lines.

TRANSITION—Another step in the transition or modification process is illustrated here. This mill (smaller than that pictured above) is an example of a smaller feed manufacturing plant serving a nearby area. At the same time, it is not so simple or specialized as a plant pictured elsewhere.

Due to the change in formulation and the increased number of feeds at the end of this period, it was necessary to change the design of the feed plants, and so we go into the second



TERMINAL MILL—This is typical of the large terminal plants built some years ago. These frequently were built in larger cities near the source of ingredients.



J. D. Johnson

AUTHOR — J. D. (Don) Johnson is production superintendent for the feed division of General Mills, Inc., Minneapolis, manufacturer of Larro Feeds. Before assuming his present position seven years ago, Mr. Johnson was a production supervisor, maintenance supervisor, plant engineer and plant superintendent. Mr. Johnson is also well known for his work as a former chairman of the Feed Production School. He is a graduate of St. Olaf College, Northfield, Minn.

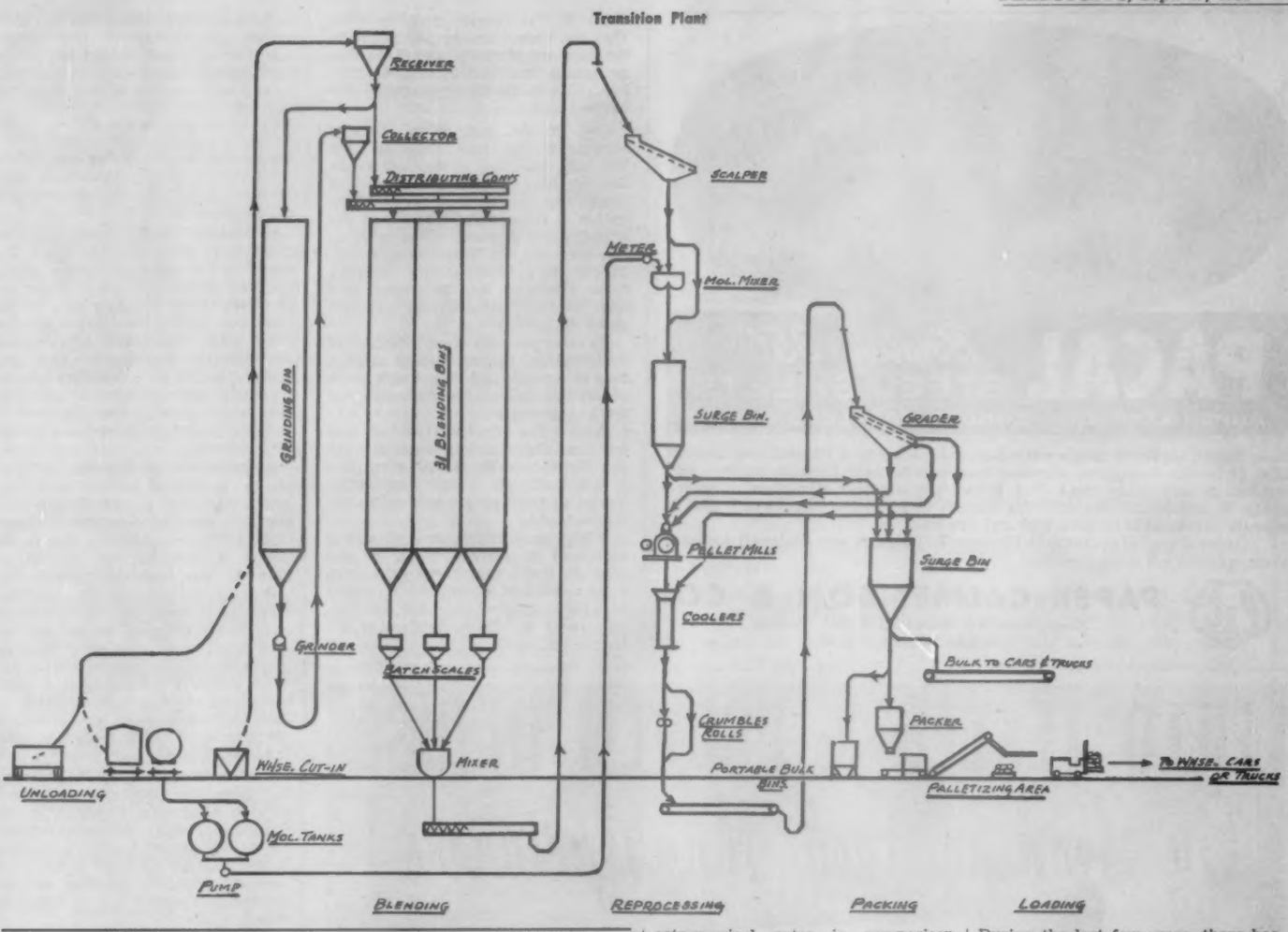


TABLE 1. Construction Costs and Labor Efficiency

	PHASE I	PHASE II	PHASE III
Initial Construction Cost	$8,000,000 to $15,000,000	$1,000,000 to $4,000,000	$100,000 to $300,000
Annual Tonnage Potential	375,000 Tons to 600,000 Tons	50,000 Tons to 100,000 Tons	25,000 Tons to 40,000 Tons
Construction Cost Per Ton Feed	$21.30 to $25.00	$20.00 to $40.00	$4.00 to $7.50
Labor Efficiency	½ Ton per M/H	1 Ton per M/H	2 Tons per M/H

phase—intermediate plants. The second phase of the feed mill design can be considered the transition period.

PHASE 2—TRANSITION PLANTS: Changes in the design were necessary, for one thing, to keep pace with the many new ingredients, such as medicants, trace minerals and vitamins, and the addition of liquids, such as tallow, phosphoric acid and fish solubles.

As the trends in feeding changed, the mills had to change also. The first plants constructed shortly after the end of World War II were quite large. Some of them were still continuous line mix plants, but more and more the plants went to batch design. Facilities were provided for handling practically everything in bulk. Some of the plants were designed to handle a portion of their finished feed in bulk. New varieties and textures of feeds necessary along with formulation to have a complete line for the various ages of layers, broilers, turkeys, cows and hogs, required that frequent changes be made in the feed being produced.

During this period, there was a gradual change in the growing end of the business. Farmers began to enlarge in one segment or another. As the cost of labor on the farm increased, it became necessary to produce feeds that were complete and would require less work. Much emphasis was on large warehouses that had the maximum in material handling efficiency.

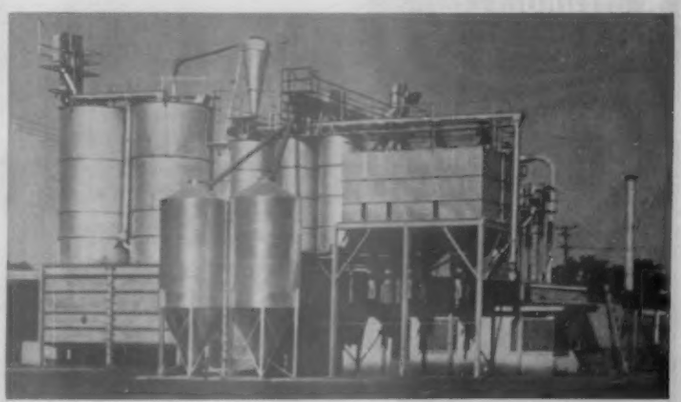
As the cost of labor in the mills increased, more and more labor saving devices were necessary. Some of the innovations of this period were automatic high speed packers, electronic weighing devices, continuous mixers for the addition of fats, molasses and other liquid ingredients.

Pelleting came into its own in this period, and no mill was complete without such facilities. Equipment manufacturers continued making bigger and better pellet mills that produced pellets, crumbles and cubes at astronomical rates in comparison with the original machines.

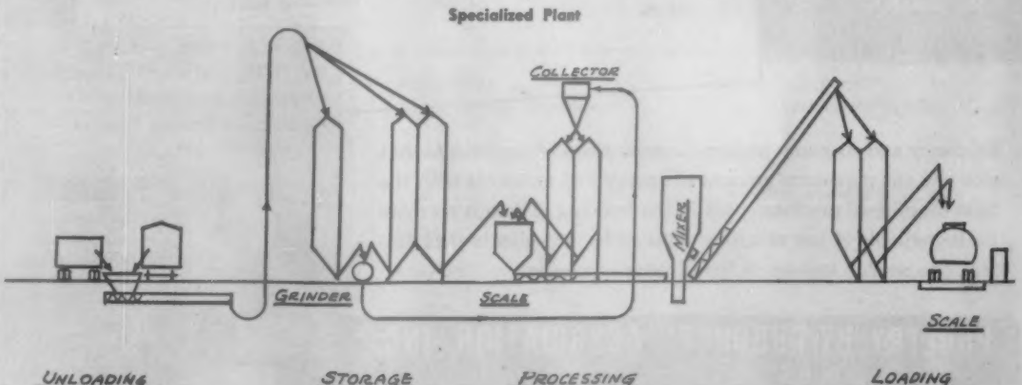
Most plants were constructed with the idea of making every type of feed, but here and there, there were mills being built to produce a limited number of certain feeds.. These were mills in concentrated cattle or poultry areas, for example. Also, some other smaller plants were being built.

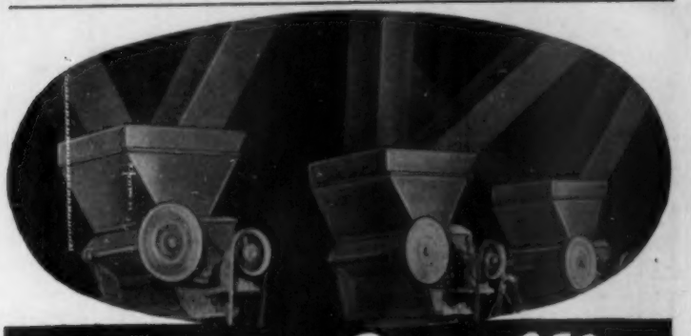
PHASE 3—SPECIALIZED MILLS: During the last few years, there has been more and more concentration of specific types of animals in certain areas of the country. The Delmarva, Georgia, Arkansas and other broiler industries are one example.

It can be said that the production of meat, eggs and milk has become a highly specialized business, and it is necessary in this highly competitive business to hold cost of production



SPECIALIZED MILL—Pictured here is a specialized feed mill which turns out a limited number of feeds for a specialized poultry producing area.





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down to the lowest possible level. This has been a major factor in the development of specialized feed mills, producing and distributing feed at low costs to nearby specialized production units.

One of the cost-saving methods introduced and perfected has been the bulk handling of finished feeds. The handling of feeds in bulk has its limitations in that the user must be within a reasonable distance of the manufacturing plant. Most persons feel that this is a 50 to 100 mile radius. So, the specialized mill will likely be a smaller unit producing bulk feed for distribution within this radius of the mill.

In order to hold down the cost of construction, the number of storage bins is limited, and to get maximum production time, a smaller number of feeds is produced.

Where the concentration of any one type of production—such as broilers, turkeys, laying flocks or cattle—is great enough, a mill can be designed to make only a half dozen different feeds.

While these specialized mills have increased in certain areas, it also may be noted that there have been more small feed manufacturing plants of a more general type, too. This development is related to that of the specialized mills in that efforts are made to get economical, efficient feed milling units closer to feed users. However, efficiency would not be as great as with the specialized mill producing only one or a few types of feed.

• • •

One way of comparing the different types of mills is to look at typical flow sheets. (See the accompanying diagrams.)

STORAGE: In the terminal plants there were large storage areas for whole grains and soft stocks and a transfer system to move these ingredients to the blending bins. In the transition mills, the large storage areas were eliminated and instead the incoming ingredients were unloaded directly to a blending bin. In the small specialized mills, the trend has been toward fewer bins as a smaller number of ingredients has to be handled.

BLENDING: In the terminal plants, individual feeders were required for each ingredient for each line. To change each one of these feeders for each formula change required a considerable amount of time. In the transition plants, this was corrected by using batching scales and automatic or electronic equipment to control the system. The time required for changes is relatively small, and the flexibility as to formulas is nearly without limit. A small specialized plant can be operated by push buttons or slides and eliminate the expense of either feeders or electronic equipment.

PACKING: In the packing area in the large terminal plants, several packing lines were required. In the transition plants, this was reduced due to the influence of bulk loading. In specialized plants, the packing has been practically eliminated as the greater part of the feed is loaded by bulk.

LOADING: In the loading area, the large terminal mills required either elaborate conveying systems to the box car loading area or enormous warehouses to store the feeds needed to supply the demand. In the transition plants, the loading is most commonly done by lift truck or hand

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truck loading. This reduced the total investment required in this area. In specialized plants, the warehouses have been eliminated and bulk facilities substituted.

Another way to compare the trend is to review the cost of construction and annual tonnage potential, and relating the construction cost per ton of feed produced.

Another area—and an important one also—is the efficiency of the plant. As plant design has moved from one phase to another, work has been eliminated, and as a result, the efficiencies of the plants improved. These comparisons are shown in Table 1.

• • •

As noted above, not all of these changes are clear-cut, and some highly specialized plants, producing only a very limited number of feeds, would not fit into some areas. But, of course, there has been a general trend toward smaller mills serving smaller areas.

Nobody knows exactly what the requirements will be for tomorrow's feed plants, but I am sure that the design will be changed so that the ultimate user will obtain his feed at the lowest possible cost.

Montana Mills' Feed Earnings Show Gain

GREAT FALLS, MONT. — Feed division earnings for the Montana Flour Mills Co., Great Falls, showed a "modest" increase during the fiscal year ending June 30, 1960, according to C. G. McClave, president and general manager.

"This modest increase in the feed division does not reflect the excellent progress made in laying a foundation for expanded operations which are anticipated in this and succeeding years," said Mr. McClave in an annual report to stockholders of the company.

"A new Great Falls feed plant will be completed in November, and this is expected to add substantially to the earnings potential of the feed division, too."

According to the report, earnings after taxes in the year just ended were $356,944, equal to $2.48 per share. This compares with earnings of $382,621 last year, equal to $2.66 per share.

Dividends of $115,191, equal to 80¢ per share, were paid during the year, as compared to $86,393, equal to 60¢ per share, paid last year.

"It should be noted," said Mr. McClave, "that, despite an increase of $72,506 in interest charges, an increase of $91,130 in year-end inventories, and an increase of $95,232 in bad debts, cash on hand at year-end was $138,365 greater than last year.

"Also, short-term notes payable have been reduced by $900,000, a total of $615,850 has been added to plant during the year and working capital has been increased by $1,135,720.

"The results of operations in the various divisions were satisfactory with the exception of the elevator division. A substantial drop in storage and handling revenues and the loss sustained from the bad debts ($84,000 of this was in one elevator division account which went bankrupt) were largely responsible for the disappointing level of the elevator division earnings.

"In addition to the slight increase in the feed division, the milling division earnings were substantially better than for the year ended June 30, 1959."

Mr. McClave explained that the company is off to a slow start this year, due to strikes occurring at the Bozeman flour and feed plants and at the Great Falls mill. But barring unforeseen circumstances, the prospects are brighter for this year than for last, he concluded.

NEW LOCATION SELECTED

MEMPHIS, TENN.—W. C. Pitts & Son, Inc., soon will move to a new location at 1488 Channel on Presidents Island here. The company specializes in grain handling machinery, cotton gin machinery and mill supplies serving the mid-south states. Founded in 1928 by W. C. Pitts, who is still active in its operation, the firm has been at its present location for 28 years.

FIRM BUYS PLANE

ANOKA, MINN.—Ghostley's Poultry Farms here has purchased a new airplane to be used in servicing poultry accounts throughout the U.S. The plane will be principally used by the sales and service departments. "This is another step in the rapid expansion program we've undertaken to better serve our clients," according to Fred Ghostley, general manager of Ghostley's Poultry Farms.

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Rate of Decline in Milk Cows Slows

WASHINGTON — The slowing of the rate of decline in U.S. milk cow numbers which began in 1959 has continued through the first half of 1960, according to a report by the U.S. Department of Agriculture.

As of June, the number was down 0.9% from a year earlier, compared with 1.2% last December and 3.2% in January of 1959. The number of milk cows in the U.S. has declined every year since the mid-1940's except in 1953. The decline this year was the smallest since 1954, the department reports.

In the meantime, production per cow has been increasing about 2% per year, offsetting all or a large part of the decline in numbers of cows. Total milk output probably will continue larger than last year through the rest of 1960, according to USDA.

In the postwar years, the change in number of milk cows has been closely associated with prices of beef cattle. With beef prices now moving cyclically lower, some further letup in the decline in number of milk cows is likely, USDA predicted.

Post-War Situation

The decline in milk cow numbers is a post-war story. In only two periods before World War II did numbers decline. One decline in the late 1920's was associated with a cattle cycle and was slight. The largest ever experienced was in the mid-1930's with the widespread drouth.

The decline started in the mid-1940's and paralleled a decline in demand for milk per capita on one hand and a rising production of milk per cow on the other. The decline has varied depending on fluctuations in the economic motivations for expediting or slowing up the rate of exodus from dairy farming. On the average, about 4% of the dairy farms ceased to produce milk each year during the last 10 to 15 years. The rate of decline was not completely offset by the increase in average number of cows per herd.

Superior sires and rigorous culling have improved production in a growing proportion of herds, the report stated.

The main economic variable has been the price received by farmers for beef cattle. Milk prices have been reasonably stable and prices of dairy rations have tended to decline as grain prices worked to lower levels. The milk-feed price relationship has been well above average for several years and at times has set new record highs, according to USDA.

Data on the number of milk cows as of June, 1960, (Table 1) indicates the decline in numbers and percentages.

Most of the Decline

North central states which had accounted for most of the decline for the country as a whole in recent years fell only half as much as in the previous year. In the south Atlantic area, numbers increased during the last 12 months, reversing a steady decline trend.

This was the first year in more than a decade that the decline for the east north central states exceeded that for any other region. Illinois is the only state with more than a half million cows that declined as much as 5% during the last year. Only eight states showed an in-

TABLE 1. Milk Cows on Farms, June, 1960, by States, with Comparisons

State and division	1959	1960*	1960 as a % of 1959
	—(thousands)—		%
Maine	97	97	100
New Hampshire	53	53	100
Vermont	260	260	100
Massachusetts	97	94	97
Rhode Island	16	15	94
Connecticut	94	94	100
New York	1,254	1,253	100
New Jersey	137	139	101
Pennsylvania	924	924	100
North Atlantic	2,932	2,929	99.9
Ohio	767	773	101
Indiana	488	480	98
Illinois	676	645	95
Michigan	745	725	97
Wisconsin	2,193	2,160	98
E. N. Central	4,869	4,783	98.2
Minnesota	1,305	1,305	100
Iowa	905	887	98
Missouri	734	732	100
North Dakota	313	301	96
South Dakota	274	263	96
Nebraska	361	353	98
Kansas	377	364	97
W. N. Central	4,269	4,205	98.5
Delaware	30	30	100
Maryland	228	229	100
Virginia	367	373	102
West Virginia	168	166	99
North Carolina	351	352	100
South Carolina	141	143	101
Georgia	281	274	98
Florida	223	234	105
So. Atlantic	1,789	1,801	100.7
Kentucky	554	554	100
Tennessee	573	573	100
Alabama	318	316	99
Mississippi	454	442	97
Arkansas	281	283	101
Louisiana	274	271	99
Oklahoma	338	331	98
Texas	660	650	98
South Central	3,452	3,420	99.1
Montana	88	86	98
Idaho	217	220	101
Wyoming	36	34	94
Colorado	132	129	98
New Mexico	49	50	102
Arizona	53	52	98
Utah	100	103	103
Nevada	16	16	100
Washington	250	250	100
Oregon	179	181	101
California	895	900	101
Western	2,015	2,021	100.3
U. S.	19,326	19,159	99.1

*Preliminary.

MARKETING CONFERENCE — Beacon Milling Co., a division of Spencer Kellogg and Sons, Inc., held its 40th anniversary Marketing Conference at Wells College, Aurora, N. Y., just 14 miles south of Cayuga, home of the firm. Shown here are 124 persons who attended the three-day period of training. Included in the program were talks by members of the firm's staff, tours of research farms and a display of 15 exhibits marking functions of different departments of the company and its parent corporation. Those attending included Beacon advisors and area, plant and store managers from 13 northeastern states. Those in the front row, from left to right, are George Allhusen, distribution specialist; Julian M. Wright, sales training assistant; Dr. L. S. Mix, director of dairy and livestock research; Robert E. Miller, director of marketing; David G. Campbell, secretary-treasurer; Stanley W. Tyler, president; Dr. Paul E. Newman, executive vice president; Freeman S. Kennedy, vice president; Dr. John M. Snyder, director of poultry research; Bruce F. Failing, marketing specialist; Baldwin C. Avery, marketing assistant, and Carroll J. Caffrey, advertising manager.

crease of 1% or more during the 12 month period.

During the first seven months of 1960, total milk production in the U.S. was larger than a year earlier. Total output was 77.7 billion pounds compared with 76.9 billion a year earlier. The consistent monthly increases this year stand in sharp contrast to the situation a year earlier, according to USDA. In the first four months of 1959 output was slightly above a year earlier, but in the months of May-August, there were substantial declines, ranging up to 250 million pounds in two of the months.

A "somewhat unusual development" reported by USDA is the decrease in production that occurred in a number of important producing states despite what appears to be favorable production conditions. July production was below that for a year earlier in Indiana, Illinois, Michigan and Wisconsin.

Price Relationship

Crop and pasture conditions Aug. 1 pointed to a possible new record in grain production and roughage supply, at least equal to that of a year earlier. During the rest of 1960, price relationships for the production of milk, after seasonal allowances, are likely to be at least as favorable as during the first half of the year, according to USDA. It is likely, therefore, that continued gains in milk production over a year earlier will be recorded during the rest of 1960, the government department said.

A seasonal decline in production of milk and manufactured dairy products by early August led to an approximate balance between supply and demand at equivalent of support prices for all items except non-fat dry milk. So far price increases have not occurred as rapidly as in the last several months of 1959, except for fluid cream, the USDA report said.

Prices for all items in mid-August were about the same as a year earlier or a shade higher.

Production Up

Production of milk in each month of 1960 has been slightly above a year earlier. Production of milk per cow was depressed in some important Upper Midwest states in the late winter or the total gain would have been much greater, USDA said. The milk-feed price relationship in the last three months has been the most favorable on record except for 1941 and milk prices have improved relative to prices of beef cattle.

Total consumption of fluid whole milk apparently is showing only a moderate increase this year. However, use of skimmed milk and low fat fluid products and some milk-cream mixtures is running substantially above a year earlier, according to USDA figures.

Hatchery Supplies Sold To Hope Feed Mills

HOPE, ARK. — The Hope Feed Mills, Inc., has purchased the incubators and hatchery supplies located in Hope, Ark., from Corn Belt Hatcheries, Inc., it has been announced. The newly purchased hatchery will be known as the Mountaire Hatchery.

The hatchery will be operating under the supervision of Neely Cassady, Nashville, Ark., a partner in the Mountaire Poultry Co. and Hope Feed Mills. This company is engaged in the hatching, growing and processing of broiler chicks in the Nashville, De Queen and Hope areas.

Sale of the hatchery in Hope will not affect the operations of other hatcheries owned by Corn Belt in El Dorado, Ark., or Rusk, Texas, according to an announcement by Freeda Roth Greenan, president. Also, the sale won't affect the hatching egg producers or pullet growers who are now working with Corn Belt Hatcheries.

Mrs. Greenan stated that a new hatchery will be constructed soon next to the Corn Belt Hatchery offices. Until this building is completed and in operation, the Mountaire Hatchery will be hatching Hy-Line chicks for Corn Belt.

Elanco Appoints New Sales Representative

INDIANAPOLIS—Elanco Products Co., a division of Eli Lilly & Co., has announced the appointment of Howard K. Thompson as an agricultural sales representative. He is headquartered in Minneapolis and serves feed manufacturers in Minnesota, Montana, North Dakota, South Dakota and central and northern Wisconsin.

H. K. Thompson

According to O. B. Swearingen, vice president of Elanco's agricultural products division, Mr. Thompson succeeds W. C. Nickel, who formerly serviced this terirtory and Iowa. Mr. Nickel is now devoting full time to feed manufacturers in Iowa.

"This territorial change in the heavy milling states was made to maintain the high level of customer service pledged by Elanco and to facilitate expansion of our marketing operations," Mr. Swearingen commented.

Prior to joining Elanco, Mr. Thompson was a field man and office manager of Opekasit, Inc., professional farm management service, Hamilton, Ohio. He also had been employed by the U.S. Soil Conservation Service, Lafayette, Ind., and served two years as a commissioned officer in the U.S. Army Corps of Engineers.

FEED MILL PLANNED

OBERLIN, KANSAS — Construction of a new $90,000 feed mill here is expected to start soon. The new push-button mill will be owned by the Decatur Co-op Assn.

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PURINA

(Continued from page 1)

taining financial assistance through his local bank rather than through the industries which serve him. And, it is possible that the agricultural extension man might best serve the farmer by excluding himself from fields in which he has not been specifically trained.

"Work Together"

Donald Danforth, chairman of Purina's board, remarked, in an address during a banquet at St. Louis' Ambassador-Kingsway Hotel, that agricultural colleges and private industry serving agriculture "should work together" and not compete with one another or conduct duplicating research.

At the same banquet, Purina's vice president in charge of research, Dr. R. M. Bethke, said, "The all-important question facing researchers and research administrations of today and the future is: Where should the emphasis on research be placed?

"I do not mean to infer that it is a question of basic vs. applied or fundamental vs. practical—but rather how much basic and how much 'products testing' work."

Dr. Bethke said he believed that "we have reached the point where greater emphasis needs to be put on basic or fundamental research and less on products testing."

Raymond E. Rowland, Ralston Purina president, told the touring group, while visiting the company's central research facilities at its Checkerboard Square headquarters in St. Louis before leaving by bus for the research farms:

"To a considerable extent, our commercial research people take the results of other basic research and bring these results to the point of practical reality in the form of commercial rations. College and commercial research aid and complement each other."

Mr. Rowland reported that Purina had just completed enlarging its main laboratory in St. Louis, and he noted that six years ago the company established an analytical laboratory at Harrisburg, Pa., and less than two years ago Purina trebled its facilities for research and quality control work at Los Angeles.

He said the new dairy research center, which the group would soon see, "has been created for one purpose: To help us develop dairy rations and management programs which will allow the dairymen to increase their profits from their dairy operations."

Private Research Expanded

Dr. Bethke, who accompanied the visiting group on its tour of Purina's research farm and new dairy unit, observed, "Most industries serving agriculture have over the past one or two decades greatly expanded their research and testing facilities as well as their technical staff and are well equipped to do products testing work.

"In view of these considerations, is it necessary and are you (referring to the college scientists in the audience) justified in spending your time and using your facilities for this type of work?

"I do not mean to imply that I question the propriety of industry supporting research at colleges or experiment stations. Actually, I am in favor of industry supporting college-supervised and planned research — and it may be that industry will be required to increase its activity in this area to cope with economic trends."

Dr. Bethke questioned the purpose of grants made to colleges by industry for research. "Is it to get basic information or merely to obtain data which can be and are often used for sales and promotion purposes?" he asked. "The establishment of financial aid via a fellowship or grant should, in my judgment, be made in a particular area without specifying product or program."

He continued:

"I am sure we are in accord that new products or feeds must be tested and tried before they are made available for general use. Likewise, I am certain that we can agree that a feeding program that is sound for most dairymen may be entirely wrong for others.

"In this respect, allow me to say that frequently we in the feed industry are put on the defensive because of college or experiment station research progress reports that find their way into farm or trade publications before all facets have been explored. When this happens we in the feed industry are subjected to many requests for and questions regarding the product or release. This frequently forces us to do work in order to obtain answers to the unanswered questions in the release or we are accused of impeding progress or being argumentative." Dr. Bethke strongly emphasized this point.

"It would help if premature public or trade releases were delayed until full answers had been obtained."

Other Comments

Dr. Bethke had other questions and comments:

"Where will the extension man find his greatest usefulness in the future? . . . The modern farmer is a big business man. To whom will this big operator look for counsel and information? Who can command his confidence? Is this well-informed production specialist becoming self-sufficient, or does he still need the kind of services that extension departments offer?

"Possibly the services that the extension man can perform best in the future might be brought into focus by pointing out the services that he ordinarily will not be able to perform best.

"For example, will he be able to offer basic information and services in the field of breeding and genetics to the big operator? I doubt it. Similarly, most extension men are in the strict sense not nutrition specialists.

"The big operator has made himself virtually a specialist in feeds. He frequently depends on a commercial feed company representative in whom he has confidence. There are other similar specialized fields where industry has performed a service to agriculture in such magnitude that it has rightfully won the feeder's confidence."

Dr. Bethke said he did not mean the extension man should exclude himself from service in these fields. He did mean, however, that the extension man "will have to adjust his concept of his job on a realistic basis and operate accordingly. He should be as thoroughly informed on commercial as on college developments so that he will be a valuable advisor and source of information for the farm operator and to industry serving agriculture.

"Extension personnel will need to recognize changing trends and adjust to them. They can increase their effectiveness by accepting and understanding the work of industry as a partner in serving agriculture and by working with industry in solving individual or area problems."

Dr. Bethke observed that colleges are training youth for jobs today which in many respects have different requirements than they had 25, or even 10, years ago. "The animal or dairy production man of today and the future," he said, "is a specialist, a businessman, a mass producer, a shrewd operator who is eminently informed in his field.

"The big questions are: To whom will this specialist go for counsel in the future? What kind of research will be of most value to him?"

Concept Has Changed

Mr. Danforth said today's feed industry is built on a foundation of research and knowledge of nutrition. Years ago, he said, the industry was one of "convenience—mixing, warehousing and delivering feed—but all that is now but a minor part of the industry."

It was Mr. Danforth's opinion that "our farmers should be independent." He recommended that their operations should be financed by their local bankers, not by the industries, such as the feed industry, which serve them. He said the Ralston Purina Co. believes that feed should be sold on the basis of the results it creates—not on how its purchase or use can be financed.

Ag Official Speaks

Speakers at various functions related to the informal dedication of the new dairy research unit were introduced by J. D. Sykes, Purina's public relations vice president. A special guest speaker was E. L. Peterson, assistant secretary of agriculture.

At the research farm, between jaunts by bus to various facilities, Purina treated its guests to cider and coffee breaks; a dinner prepared by wives of men who work on the farm, and the "Purina Show," put on by the young men and women who work in the company's offices and production and research facilities.

Unveiled at the farm were portraits of typical animals representing each of the six major dairy breeds in the western hemisphere. Copies of the six original individual portraits—painted by E. H. Hoy—have been arranged on a mat-type educational poster and can be obtained from the Ralston Purina Co. for $1 each.

Speakers during the portrait unveiling ceremony included J. P. Eves, secretary, Dairy Shrine Club, and Karl D. Musser, secretary, Purebred Dairy Cattle Assn.

FILM

(Continued from page 1)

Sept. 21-23. It was produced for the school by Butler Mfg. Co.

"This film demonstrates what occurs with various ingredients in charging bins, flowing through bins and discharging from bins," said Max Cooley, Hoffman-Taff, Inc., Springfield, Mo., chairman of this year's Feed Production School. "The problems shown are inherent in all feed manufacturing processes — in receiving, manufacturing and handling of finished feed.

"A special patented filming process employed in the production of this research movie graphically illustrates problems which will bring home to every feed production man the need for a critical appraisal of his own operations.

"It was the consensus of the members of the Feed Production School Committee attending the screening session that this film alone will make attending this year's Feed Production School worthwhile. And, of course, it is only one of the many reports that will be presented."

Hotel accommodations are still available in a limited number, according to Lloyd S. Larson, president of Feed Production School, Inc. However, he pointed out that anyone wishing to attend who has not made reservations should phone VIctor 2-3751 in Kansas City to be assured of a place.

PEAVEY

(Continued from page 8)

were reelected, including F. Peavey Heffelfinger, chairman of the board; Totton P. Heffelfinger, president, and Charles E. Huntting, executive vice president.

Five new directors were elected at the stockholders meeting. Elected were William M. Steinke, president of the milling division; Mark W. K. Heffelfinger, vice president of the division; F. Peavey Heffelfinger, Jr., vice president and assistant in charge of terminal merchandising of F. H. Peavey & Co.; George W. P. Heffelfinger, Jr., vice president of National Grain Co., Ltd., Winnipeg, Canada, a Peavey affiliate, and Gerald A. D. Smith, vice president and controller of F. H. Peavey & Co.

All other directors were reelected.

TOP OF THE HOPPER

(Continued from page 2)

a workout, too) is shown by its status as an industry which consumes more petroleum than any other, steel equal to half the amount used in automobile manufacturing and which has an investment of $27,000 per worker—$10,000 more than the U.S. average. These figures were cited by James C. North, president of Nutrena Feeds, at a company sales meeting.

DISCOVERY BY UNIVERSITY of Minnesota scientists and by investigators elsewhere, too, that some feed ingredients show contamination with Salmonella bacteria has prompted at least one feed manufacturer to set up routine checks on incoming ingredients for presence of the bacteria. Veterinarians who have studied the problem are quite concerned about the possibilities that such contamination could be related to certain poultry disease troubles. Some fairly widespread sanitation measures in appropriate places probably will have to be taken to clean up the situation. Texas work has shown that the organisms can be destroyed by pasteurization temperatures, but there remains a question as to whether or not pelleting affects them.

"NO MATTER WHAT TOMORROW'S beef animal looks like or tastes like, his mama will still be a cow and his daddy a bull." This statement sums up the observations of C. W. McMillan, executive vice president of the American National Cattlemen's Assn., on some of the new processing methods being applied to beef after slaughter, such as tenderizing, flavor addition and fat trim. Mr. McMillan in a recent talk made the point that no matter how successful some of these operations become, the importance of animal scientists and breeders will not be lessened. "The basic animal can be produced and fed only by men and by machines and techniques controlled by men," he said. "Successful tenderization at the packer level could result in new levels of consumer demand, but it does not mean the end of the feeding industry or the lessening of importance of breeding selection for qualities of growth, feed conversion efficiency—or even inherited tenderness in cattle."

PERIODICAL PRICE TROUBLES for egg producers are a worry for Australian feed manufacturers, too, reports J. F. Dickinson, James Malcolm & Co. of Australia, who is currently visiting in the U.S. Periods of good prices always bring in additional producers, and the build-up of surpluses spells trouble for those who are better established in the business. The only answer, it appears to Mr. Dickinson, is to step up exports. Some eggs move to Europe, but it's a long and costly haul, and some move to markets in the Orient, too, but most countries there lack funds for such purchases.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Boston: Demand slow; supply plentiful; 400 D, 3,000 A 19½¢ lb.; 300 D, 3,000 A 19¢; 300 D, 2,250 A 17½¢; 300 D, 1,500 A 16¢; 300 D, 750 A 14¢; 75 D, 750 A 13½¢

Minneapolis: Demand fair; supply ample; 10,000 A 31¢ lb.; 300 D, 2,250 A 17½¢ lb.; 300 D, 1,500 A 16¢ lb.; 300 D, 750 A 15¾¢ lb.

New York: Demand fair; trend steady; supply adequate; 1,500 A, 300 D 16¢ lb.; 2,250 A, 300 D 17½¢ lb.

Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7¼¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Denver: Demand light; trend steady; supply ample; 21¢ lb.

ALFALFA MEAL

Memphis: Demand fair; trend steady to higher; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $47.

Los Angeles: Demand slow; trend steady; supply adequate; dehydrated meal, 17% protein, 100,000 A $51; dehydrated pellet meal, 17% protein, 100,000 A $52@54; suncured meal, 15% protein $46@46; suncured crumbles, 15% protein $47@48.

Seattle: Demand fair; trend firm; supply good; 15% protein suncured $49, 150,000 A unit dehydrated $69, both delivered truck loads, sacked.

Portland: Demand fair; trend steady; supply adequate; $42@68.90, sacked.

Philadelphia: Demand slow; supply fair; 17% dehydrated $51.50.

Omaha: Demand slow; trend steady; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $40; sacked meal $45, Omaha basis.

Ft. Worth: Demand fair; light offerings; sacked: dehydrated, 17%, 100,000 A $51@52, truck or rail; suncured: 13% ¼-in. grind, No. 1 $47@48, truck; 15% fine ground, dry $50, with 3% fat added $52, rail or truck.

Boston: Demand steady; supply lighter; dehydrated, 17% $53; suncured, 13%, pellets $46.

Cincinnati: Demand poor; trend steady; supply adequate; 17% dehydrated, 100,000 units vitamin A $49@50, Cincinnati.

Kansas City: Demand slow; trend steady; supply adequate; 17% dehydrated alfalfa, 100,000 A, on arrival, pellets $39@42, reground pellets $44; 18% dehydrated alfalfa, 125,000 A, on arrival, pellets $42@45, reground pellets $46; 20% dehydrated alfalfa, 150,000 A, on arrival, pellets $45@50, reground pellets $46@51; suncured alfalfa, demand slow, supplies scarce, 13% pellets $36@37 bulk, No. 1 ¼-in. $38.50 sacked.

Chicago: Demand good; trend steady; supply fair; dehydrated, 17% protein, 100,000 units vitamin A $45.

Buffalo: Demand fair to poor; trend steady; supply adequate; $54, sacked.

St. Louis: Demand slow; trend steady; supply tight; suncured, 13% fine, sacked $43; dehydrated, 17%, 100,000 A, pellets, demand slow, trend steady, supply ample, bulk $42.50.

Denver: Demand fair; trend steady; supply ample; dehydrated meal, sacked $49; bulk pellets $46.

Minneapolis: Market steady; no change in prices from week ago; 17% dehydrated, 100,000 A units, reground pellets $45; oiled reground pellets $47.

ANIMAL FAT (STABILIZED)

Louisville: Demand improving; trend stronger; supply good; market up ½¢ lb.; bleachable white 6¼¢ lb., white tallow 6½¢ lb., yellow grease 7¢ lb., all in tank cars.

Ogden: Supply good; $5.50 cwt.

Boston: Demand fair; supply steady; tallow 5¾¢ lb.; yellow grease 4¾¢ lb.

San Francisco: Demand fair; supply ample; bleachable fancy 6¢ lb.; yellow grease 4¾¢ lb.

Ft. Worth: Demand good; supply sufficient; prime tallow, tank cars 5¾¢ lb.; drums 7¾¢ lb.; f.o.b. north Texas packing plants with returnable drums.

Chicago: Tank truck or carlots, bleachable fancy tallow $5.87½ cwt.; yellow grease $5 cwt.

St. Paul: Market steady; demand good; supply ample; bleachable fancy 5¾¢ lb., f.o.b. producer's plant.

Atlanta: Demand fair; trend steady; supply ample; 5¾¢ lb., f.o.b. Georgia and Alabama processing plants.

Kansas City: Demand slow; trend easy; supply ample; stabilized prime tallow 5¾@6¼¢ lb.

Salisbury, Md.: Demand good; supply limited; 5¾¢ lb.

BARLEY FEED

Boston: Demand and supply steady; $47.

San Francisco: Demand fair; supply ample; rolled $58, ground $57.

Ogden: Supply good; rolled $43@44, whole $38@39.

Los Angeles: Demand fair; trend firm; supply adequate; standard rolled $3 cwt., standard ground $3 cwt., both sacked.

Portland: Demand good; trend higher; supply tight; $44@44.50.

Seattle: Demand and supply good; trend firm; $44.50, truck lots.

Philadelphia: Demand slow; supply fair; $41.50.

Milwaukee: Demand limited; trend unchanged; supply ample; feed barley 84¢ bu.; barley feed $36, sacked; ground feed barley $41.50, sacked.

Baltimore: Demand and supply fair; trend steady; $46.50, sacked.

Chicago: Demand fair; trend firm; supply moderate; $36, sacked.

Denver: Demand and supply fair; trend steady; rolled $2.05 bulk, $2.25 sacked.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30 ton carlots: 80 granular $31.50, less than carlots $40; 200 mesh fine $31, less than carlots $40.

Chicago: Demand fair; supply ample; trend steady; f.o.b. Wyoming and South Dakota shipping points: 200 mesh $14 and net $13.75; fine granular (80 to 100 mesh) $14.25 and net $14; granular, 30 mesh $16.50 and net $16.25.

Denver: Demand slow; trend steady; supply ample; $24.50, warehouse.

BLOOD FLOUR

Louisville: Demand slow; trend steady; supply good; $76@30, sacked.

BLOOD MEAL

Los Angeles: Demand slow; trend steady; supply adequate; $8 a unit of ammonia, sacked.

Portland: Demand dependable; supply ample; trend steady; $110, sacked.

Ogden: Supply good; $82.50.

Omaha: Demand and supply good; trend strong; 80% $85, sacked, Omaha.

San Francisco: Demand and supply fair; $5.40 a unit of ammonia, sacked.

Louisville: Demand slow; trend steady; supply normal; $75@80, sacked.

BONE MEAL (STEAMED)

Boston: Demand and supply steady; $100.

Los Angeles: Demand and trend steady; supply limited; imported $79.75, sacked, 20 ton lots.

Portland: Demand fair; trend steady; supply ample; $97@97.50, sacked.

Seattle: Demand good; trend firm; supply limited; $92, sacked, f.o.b. car Seattle.

Louisville: Demand slow; trend steady; supply light; $80@85, sacked.

San Francisco: Demand good; supply ample; $75, sacked.

Ft. Worth: Demand fair; supply light; $100, sacked, f.o.b. Ft. Worth, local manufacture.

Cincinnati: Demand fair; trend steady; supply ample; $95, sacked, Cincinnati.

Chicago: Demand slow; trend firm; supply fair; $80, sacked.

Buffalo: Demand and supply light; trend steady; $97, sacked.

Denver: Demand normal; trend steady; supply ample; $110, Denver.

BREWERS DRIED GRAINS

Boston: Demand fair; supply light; 24% $51; 26% $52.

Milwaukee: Demand fair; trend strong; supply limited; $41.50 bulk, $49 sacked.

Los Angeles: Demand and trend steady; supply adequate; $49.50.

San Francisco: Demand fair; supply ample; $51, sacked.

Philadelphia: Demand fair; supply light; $52.50.

Louisville: Demand and trend strong; supply fair; $50, sacked.

Ft. Worth: Demand fair; supply sufficient; 26% protein $49.90, October.

Cincinnati: Demand poor; trend steady; supply adequate; $47.85.

New York: Demand good; trend steady; supply ample; $52 bulk, $60 sacked, Boston.

Buffalo: Demand fair to good; trend higher; supply fair; $53, Boston.

St. Louis: Demand good; trend higher; supply light; $40.

Chicago: Demand fair; trend steady; supply adequate; 26% protein $37.50@38.50.

BREWERS DRIED YEAST

Omaha: Demand and trend fair; supply plentiful; 11¢ lb.

Los Angeles: Demand and trend steady; supply adequate; 10¢ lb., 5 ton lots; 11¢ lb., 1 ton lots; 12¢ lb., less than ton lots; all sacked.

San Francisco: Demand fair; supply good; 10¢ lb., sacked.

Louisville: Demand and supply good; trend steady; 10@10½¢ lb., sacked.

Portland: Demand fair; supply ample; trend steady; 11@12¢ lb.

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

Boston: Demand and supply steady; 11¢ lb.

Cincinnati: 11½¢ lb., sacked.

Chicago: Demand fair; trend steady; supply ample; 9⅛@10¢ lb., carlots, sacked; 9⅝@12½¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10⅛@12⅛¢ lb., ton lots, sacked.

St. Louis: Demand fair; trend firm; supply ample; 9⅛@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New Orleans: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New York: Carlots 9½¢ lb., 10 ton lots 10¢ lb.; 5 ton lots 10½¢ lb.; ton lots 11¢ lb, all sacked, f.o.b. New Jersey.

Buffalo: Demand fair; trend steady; supply ample; $9.05 cwt.

Denver: Demand light; trend steady; supply ample; 9¢ lb.

BUTTERMILK (CONDENSED)

Los Angeles: Demand and supply limited; trend steady; 5½¢ lb., 100 lb. lots; 4½¢ lb., 500 lb. lots; both in barrels.

Boston: Demand and supply steady; 4¼¢ lb.

Ogden: Supply ample; $4.40 cwt., drum.

Philadelphia: Demand slow; supply fair; $4.25 cwt.

San Francisco: Demand fair; supply good; $5 cwt., drums.

Louisville: Demand dull; trend steady; supply light; $4.25 cwt., in paper drums.

Chicago: Demand quiet; trend firm; supply fair; 500 lb. barrels $3.25@3.50 cwt.

CALCITE CRYSTALS AND FLOUR

(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $18.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N.J.: Crystals $11.50, flour $5.50.

CALCIUM CARBONATE

Seattle: Demand and trend steady; supply good; $14, sacked, ex-warehouse.

Los Angeles: Demand slow; trend steady; supply adequate; flour $10.15, 20 ton cars; meal $11.15, 20 ton cars; both sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $8.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $12.75; 100 lb. bags $12; bulk, boxcar $10.50; bulk, hopper $10; coarse grind $1 premium, delivered Minneapolis.

CHARCOAL

Boston: Demand and supply light; granular No. 6 $110.

Los Angeles: Demand slow; trend unchanged; supply adequate; hardwood poultry, $156, less than ton lots; $144.40, ton lots; both sacked.

San Francisco: Demand steady; supply ample; $141, sacked.

Chicago: Demand fair; trend firm; supply fair; 50 lb. multiwalls $110.

COCONUT OIL MEAL

Portland: Demand slow; trend firmer; supply adequate; $71.50.

Los Angeles: Demand and trend steady; supply adequate; copra cake $63.

Seattle: Demand fair; trend easy; supply ample; solvent type $75, sacked, f.o.b. car Seattle.

San Francisco: Demand good; supply tight; solvent $67.50, expeller $70.

COD LIVER OIL (FORTIFIED)

Boston: Demand slow; supply plentiful; 300 D, 2,000 A 20¢ lb.; 600 D, 2,250 A 18¾¢; 300 D, 2,250 A 18¢; 600 D, 1,500 A 17¢; 300 D, 1,500 A 16¾¢.

New York: Demand fair; trend steady; supply good; 1,500 A, 300 D 16½¢ lb.; 3,000 A, 300 D 20¢ lb.

CONDENSED FISH SOLUBLES

Los Angeles: Demand and trend steady; supply adequate; 2@2½¢ lb.

Boston: Demand slow; supply plentiful; 2¢ lb.

New York: Demand fair; trend light; supply ample; $35@40.

Denver: Demand light; trend steady; supply ample; 3¢ lb., West Coast.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $5 more)

Minneapolis: Feed $41.60, meal $66.60.
Atlanta: Feed $45, meal $70.
Birmingham: Feed $43.60, meal $68.60.
Boston: Feed $46.50, meal $71.50.
Chicago: Feed $35, meal $60.
Cleveland: Feed $42.90, meal $67.90.
Denver: Feed $45.20, meal $70.20.
Ft. Worth: Feed $43.70, meal $68.70.
Indianapolis: Feed $40.20, meal $65.20.
Kansas City: Feed $35, meal $60.
Louisville: Feed $42.60, meal $66.60.
New Orleans: Feed $44.90, meal $69.90.
New York: Feed $46.10, meal $71.10.
Norfolk: Feed $45.50, meal $70.50.
Philadelphia: Feed $46.70, meal $70.70.
St. Louis: Feed $35, meal $60.

CORN OIL MEAL

Seattle: Demand good; trend steady; supply ample; $55, carlots.

Louisville: Demand very dull; supply light; trend steady; $49.60, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $41.

COTTONSEED OIL MEAL

Louisville: Demand fair; trend easy; supply good; new crop, new or old process $52, sacked.

Los Angeles: Demand slow; trend weaker; supply adequate; $56.

Omaha: Demand slow; trend easy; supply ample; 41% solvent $53.70, delivered Omaha.

Ft. Worth: Demand good; supply scarce on old process and hulls, sufficient on solvent; 41% old process $53, f.o.b. mills Ft. Worth; carlots, solvent, 2% fat added $56.50, September; $57.50, October-November-December, delivered Ft. Worth; pellets $2 additional; hulls $22.

Boston: Demand fair; supply light; $74.

Wichita: Demand fair; supply ample; 41% old process $69, sacked.

Memphis: Demand poor; trend weak; supply ample; prime 41% protein, old process $52; new process, 41% solvent $50.

Ogden: Supply ample; 41% $67@71.

Seattle: Demand fair; trend easy; supply ample; $67, f.o.b. car Seattle.

Portland: Demand slow; trend steady; supply adequate; $64.

Philadelphia: Demand and supply fair; $65.

San Francisco: Demand good; supply ample; 41% $61, 44% $64.

Cincinnati: Demand fair; trend lower; supply adequate; $58.10.

Kansas City: Demand good; trend weaker; supply ample; 41% old process $53@53.50; solvent process $50@50.50, Memphis.

Buffalo: Demand fair to poor; trend steady to lower; supply fair; $75, sacked, Boston.

St. Louis: Demand slow; trend steady; supply ample; solvent $55.

Chicago: Demand good; trend higher; supply light; Memphis basis, hydraulic $56.50.

Atlanta: Demand good; trend stronger; supply limited; 41% $56 Georgia, South Carolina and Alabama, $54 Mississippi and Tennessee producing mills.

Denver: Demand fair; trend steady; supply ample; $59.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $46.50 sacked, $43.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

Cincinnati: Demand slow; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 10¢ lb., warehouse.

Kansas City: Demand fair; trend steady; supply ample; 1,500 ICU 9¾¢ lb.; 3,000 ICU 11¢ lb.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 23¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18%, $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck loads of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $74.35 net ton, f.o.b. Houston, 100 lb., multiwall bags; $71.35 bulk.

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $66.25, sacked, 100 lb. multiwall bags, bulk $63.25; truck load $67, sacked, in 100 lb. multiwall bags, bulk $64, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $57.07, f.o.b. Tupelo in 100 lb. multiwall bags, $54.07 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $71.80 (or $3.99 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Portland: Demand fair; trend steady; supply adequate; $93.50, delivered for offerings carrying a minimum of 18% phosphorus, 31.5% calcium and a maximum of 0.1% fluorine; $92 dock for a minimum of 10 ton lots.

Cincinnati: 18% phosphorus $81.02, 14% phosphorus $71.03, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Trenton, Mich.: 18½% P $83, bulk, boxcar/hopper car; $86, bagged, in carloads or truck loads; $96 bagged, in less than carload lots; 21% P, $94.65, bulk, boxcar/hopper car; $97.64, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk 18.5% phosphorus, carlots or trucks $83; 20,000 lb. or more $86 net ton in 100 lb. papers; less than 20,000 lb. $96, basis Chicago Heights, Ill., or Nashville, Tenn.; 21% phosphorus, carlots or trucks, bulk $94.65; 20,000 lb. or more, per net ton in 100 lb. papers, $97.65 and less than 20,000 lb., $107.65, basis Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $86 (or $4.65 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $86, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truck load $80.50, sacked in 100 lb. multiwall bags, bulk $77.50, f.o.b. Texas City.

Denver: Demand fair; trend steady; supply ample; $93.50, delivered.

Cincinnati: 18½% phosphorus $92.15, f.o.b. Cincinnati.

DISTILLERS DRIED GRAINS

Boston: Demand good; supply scarce; September shipment, dark $60.

Philadelphia: Demand slow; supply light; $61.50.

San Francisco: Demand fair; supply ample; solubles $79, sacked.

Louisville: Demand good; trend strong; supply limited; production light; bourbon grains: light $54, dark $56, solubles $73, all sacked.

Seattle: Demand fair; trend firm; supply nil; $69, sacked, delivered truck lots.

Cincinnati: Demand poor; trend steady; supply adequate; $60.
Buffalo: Demand fair to good; trend steady to higher; supply fair; $62.50, Boston.

DRIED BEET PULP

Seattle: Demand good; trend firm; supply limited; $52, delivered carlots, sacked.
Los Angeles: Demand slow; trend unchanged; supply ample; $45.40@46.50.
Boston: Demand active; supply short; $56.
Milwaukee: Demand good; trend strong; supply limited; molasses or plain, new crop $51.50; plain, old crop $74.50; molasses, old crop $71.
Portland: Demand slow; supply scarce; trend unchanged; $51.60, sacked.
San Francisco: Demand good; supply fair; $41.30.
Ogden: Supply good; $41@46.
Ft. Worth: Interest increasing; new crop offerings just starting; plain or molasses $56@57, sacked, 50 lb. papers, October-November-December.
Buffalo: Demand fair; trend steady to higher; supply poor; $72, sacked, Boston.
Atlanta: Demand fair; trend steady; supply nil; $57.50, sacked, delivered, new crop, October.
Denver: Demand good; trend steady; supply short; $75, f.o.b.

DRIED BUTTERMILK

Los Angeles: Demand slow; trend steady; supply adequate; 13⅛@13¾¢ lb., sacked.
Milwaukee: Demand and supply limited; trend unchanged; $12.50 cwt.
Ogden: Supply ample; $17.25 cwt.
Boston: Demand slow; supply short; 14¢ lb.
San Francisco: Demand fair; supply ample; 13⅛¢ lb., sacked.
Louisville: Demand slow; trend steady; supply ample; $12@12.50 cwt., sacked.
Buffalo: Demand fair; trend steady; supply limited; $12.85 cwt.
Chicago: Demand quiet; trend firm; supply fair; medium acid $10.75@11.25 cwt., sweet cream $10.75@11.25 cwt., both sacked.

DRIED CITRUS PULP

Los Angeles: Demand good; trend firmer; supply limited; orange pulp $43, lemon pulp $41.
Boston: Demand quiet; supply nil; $47.50, nominal, sacked.
San Francisco: Demand and supply fair; $48, sacked.
Buffalo: Too scarce to quote.
Atlanta: Demand good; trend steady; supply limited; $47.50, sacked; meal $40@42.50, sacked; both f.o.b. Florida processing plants.

DRIED SKIM MILK

Philadelphia: Demand slow; supply fair; $13 cwt.
San Francisco: Demand and supply fair; 14½¢ lb., sacked.
Milwaukee: Demand and supply limited; trend unchanged; $12 cwt.
Portland: Demand fair; supply good; trend unchanged; 13¢ lb.
Los Angeles: Demand and supply limited; trend steady; 15¢ lb., less than ton lots; 14¾¢ lb., ton lots; both sacked.
Boston: Demand good; supply scarce; 12½¢ lb.
Omaha: Demand good; trend strong; supply short; 12¢ lb.
Louisville: Demand slow; trend steady; supply light; $12@12.50 cwt., sacked.
Ogden: Supply good; $15.15 cwt., drum.
Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.
Buffalo: Demand fair; trend steady; supply ample; $13.35 cwt.
Chicago: Demand slow; trend steady; supply fair; $10.75@11.25 cwt., sacked.

DRIED WHEY

San Francisco: Demand steady; supply good; $5.75 cwt., sacked.
Philadelphia: Demand slow; supply fair; $6.25 cwt.
Boston: Demand and supply good; 5¼¢ lb.
Louisville: Demand slow; trend steady; supply light; $5.75@6 cwt., sacked.
Seattle: Demand steady; trend easy; supply good; $6.25 cwt., ex-warehouse, l.c.l.
Portland: Demand fair; trend steady; supply adequate; $5.95 cwt., sacked.
Los Angeles: Demand slow; trend steady; supply adequate; $5.18 cwt., carloads; $5.35 cwt., l.c.l., both sacked.
Ft. Worth: Demand fair; supply adequate; carlots, standard $5.50, sacked, delivered Ft. Worth; ton lots $5.75, f.o.b. warehouse, Ft. Worth.
Ogden: Supply ample; $6.90 cwt., sacked.
Omaha: Demand and trend good; supply plentiful; $5.50 cwt.
Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked.
Minneapolis: Demand slow; supply ample; price steady at $5.45 cwt.
Kansas City: Demand fair; trend steady; supply adequate; regular or partially delactosed $4.75 cwt., sacked.
Chicago: Demand slow; trend firm; supply fair; $4.75 cwt., sacked.
Denver: Demand weak; trend steady; supply ample; $5.75 cwt., truck.

FEATHER MEAL (HYDROLYZED)

Boston: Demand and supply fair; $69, nominal.
Los Angeles: Demand fair; trend steady; supply adequate; $1 a unit of protein, sacked.
Ft. Worth: Demand good; supply limited; 85-87% protein $69@72, sacked, f.o.b. trucks north Texas plants.
Salisbury, Md.: Demand spotty; supply ample; $70, f.o.b.
Atlanta: Demand fair; trend steady; supply ample; $70, f.o.b. Georgia and Alabama processing plants.

FISH MEAL

Louisville: Demand slow; trend steady; supply light; $110@115, sacked.
Boston: Demand fair; supply plentiful; menhaden, 60%, sacked $93; red fish, 67% $88, sacked.
San Francisco: Demand slow; supply ample; $1.50 a unit of protein, sacked.
Seattle: Demand fair; trend firm; supply good; $1.65 a unit protein, ex-dock, Seattle, sacked (Alaskan production).
Ft. Worth: Demand fair; supply of Peruvian limited, menhaden sufficient; sacked: 65% protein, Peruvian $94.50, September-October; 60% protein menhaden $100, delivered Ft. Worth.
Omaha: Demand good; trend strong; supply plentiful; 60% menhaden $110, f.o.b. Omaha.
Portland: Demand slow; trend firm; supply ample; imported Peruvian herring $1.50 a unit protein, sacked, for October shipment.
Milwaukee: Demand unchanged; trend strong; supply good; 60% $115, sacked, Chicago basis.
Los Angeles: Demand steady; trend firmer; supply light; local production, 60% protein $1.50@1.55 a unit, sacked.
Ogden: Supply good; $1.05 a unit, f.o.b. Coast; 65% $105@108.
Cincinnati: Demand fair; trend steady; supply adequate; $108.60.
New York: Demand fair; trend slow; supply adequate; 60% menhaden meal $98, sacked, f.o.b. shipping points.
Buffalo: Demand fair; trend steady; supply ample; 60% protein menhaden $103 bulk, $108 sacked.
Chicago: Demand remains quiet; supply liberal; trend firm; menhaden, East Coast $90@95, Gulf $90@93, menhaden scrap, East Coast $86@91, Gulf $86@91; Canadian herring meal $1.55 a unit of protein.
Minneapolis: Demand fair; supply ample; no change in prices since a week ago; West Coast, 60% blended, steady at $118, sacked, delivered; Alaskan herring $1.52 a unit, f.o.b. West Coast, subject to production.
Atlanta: Demand fair; trend stronger; supply good; 60% menhaden $90@93, sacked, f.o.b. Atlantic and Gulf ports.
Denver: Demand fair; trend steady; supply short; $1.60 a protein unit, f.o.b. West Coast.

HAY

Ogden: Supply good; $22 in the field; $25 in the barn.
Wichita: Demand low for prairie, fair for alfalfa; supply sufficient; prairie $21@23, alfalfa $20@22, baled.
Louisville: Demand very dull; trend easy; supply good on old hay, some new hay available but dealers not handling for fear of heating, and as they have plenty of old hay on hand; No. 1 hay, any variety (local) $30 ton; No. 2, $28; straw, any variety, No. 1 $18@20 ton; some new alfalfa being sold.
Los Angeles: Demand slow; trend steady; supply adequate; U.S. No. 1 $32@34; U.S. No. 2 leafy $29@30; U.S. No. 2 green $31@32; U.S. No. 2 $27@28.
Portland: Demand good; trend fully steady to firm; supply adequate; alfalfa $31@34, baled, Portland-Seattle.
Philadelphia: Demand slow; supply light; $24.50@25.50.
Seattle: Demand fair; trend steady; supply good; alfalfa, U.S. No. 2 green $32, delivered truck lots, baled.
Boston: Demand slow; supply ample; No. 2 timothy $40@42.
Ft. Worth: Demand fair for alfalfa, practically nil for others; carlots, baled, No. 1 alfalfa $40@42, No. 2 $38@40; No. 2 prairie, nominal $30@32; No. 2 Johnson, nominal $28@30, delivered Texas common points.
Cincinnati: Demand fair; trend higher; supply adequate; No. 1 timothy $30; No. 2 timothy $27; No. 1 red clover $32; clover mixed with straw $25.

HOMINY FEED

Memphis: Demand poor; trend steady; supply ample; white $41.20, yellow $41.20.
Seattle: Demand fair; trend steady; supply limited; $54, delivered carlots.
Louisville: Demand very dull; trend steady; supply normal; $47, sacked.
Milwaukee: Demand and supply fair; trend unchanged; $45.50 sacked, $41 bulk, both Chicago basis.
Boston: Demand fair; supply light; $50.
Cincinnati: Demand poor; trend higher; supply adequate; $43.
Chicago: Demand good; trend higher; supply light; $40.
Buffalo: Demand and supply fair; trend steady to higher; $50.50, Boston.
St. Louis: Demand slow; trend steady; supply ample; yellow $38.50.
Kansas City: Demand fair; trend steady; supply tight; white or yellow $33@33.50.

LINSEED OIL MEAL

Milwaukee: Demand limited; trend weaker; supply fair; expeller $68.50, solvent $62, both Chicago basis.
Portland: Demand dull; trend lower; supply small, but adequate; $82.25, sacked.
Omaha: Demand slow; trend easy; supply ample; 34% solvent $56.80, 32% old process $62.80, Omaha basis.
Seattle: Demand fair; trend steady; supply good; 21% protein (California) $92, delivered carlots, sacked.
Boston: Demand slow; supply light; $73.
Ft. Worth: Demand slow; supply sufficient; 34% protein, solvent $67.50@68, September, rail.
Wichita: Demand fair; supply ample; 34% $78, sacked.
Los Angeles: Demand limited; trend unchanged; supply ample; local production, 31% protein $73, old crop.
Louisville: Demand dull; trend steady; supply average; old process $76, new process $70.50, both sacked.
San Francisco: Demand fair; supply ample; $69.50.
Philadelphia: Demand slow; supply fair; 34% $69.20.
Cincinnati: Demand slow; trend steady; supply adequate; new process $52.50, old process $58, Minneapolis.
Kansas City: Demand fair; trend weaker; supply ample; solvent process $51@51.50; old process $57@57.50, Minneapolis.
Chicago: Demand only fair; trend easier; supply ample; solvent $51.50, expeller $56.50, both Minneapolis basis.
Denver: Demand slow; trend steady; supply ample; $69.30, sacked.
Minneapolis: Domestic demand quiet, but export interest strong; supplies ample; solvent $50 spot, $53 October-December.

LIVER AND GLANDULAR MEAL

Omaha: Demand and trend fair; supply plentiful; 65% $175, sacked, Omaha.

MALT SPROUTS

Milwaukee: Demand good; trend firm; supply limited; $34.50@35 bulk; uneven weights $40; even weights $42@42.50.
Boston: Demand and supply limited; $48, sacked, nominal.
Cincinnati: Demand fair; trend higher; supply adequate; No. 1 $42.60.
Chicago: Demand good; trend strong; supply light; No. 1, uneven bags $38.50.

MEAT AND BONE MEAL

Wichita: Demand fair; supply sufficient; 50% $80, sacked, f.o.b. plant.
Boston: Demand slow; supply ample; $1 a protein unit; converted 50% $62.50.
San Francisco: Demand fair; supply ample; $1.40 a unit of protein.
Louisville: Demand fair; trend steady; supply good; $75@80, sacked.
Seattle: Demand good; trend easy; supply ample; $1.45 a unit protein, ex-processing plant, sacked.
Ft. Worth: Demand fair; supply ample; meat and bone, 50% $71 bulk, $74 sacked, f.o.b. Ft. Worth.
Portland: Demand good; trend higher; supply adequate; $69, sacked.
Los Angeles: Demand limited; supply moderate; trend steady; 50% protein $1.40 a unit.
Ogden: Supply good; 50% protein $75, sacked.
Cincinnati: Demand good; trend firmer; supply fair; 50% meat and bone scraps $71, Cincinnati.
Omaha: Demand good; trend strong; supply plentiful; $75.
New York: Demand steady; trend and supply good; 50% $60, 55% $66, New York.
St. Louis: Demand fair; trend steady; supply ample; $69.
St. Paul: No change from week ago; demand fair; supply ample; $73@76 sacked, $70@75 bulk.
Chicago: Demand quiet; trend firm; supply adequate; 50% protein $77.50, sacked.
Buffalo: Demand fair; trend barely steady; supply light; 50% meat scraps $70 bulk, $75 sacked.
Denver: Demand fair; trend steady; supply ample; $63.50.
Kansas City: Demand slow; trend firm; supply tight; 50% $70@72.50.

MILLFEED

Minneapolis: Brisk demand for quick shipments to the East, where mill worker strikes have curtailed production, but price changes from last week slight; bran and middlings $33.50, sacked; red dog $43, sacked.
Kansas City: Demand slow; trend steady; supply ample; sacked, bran $33.50@34, shorts $33.50@34; bulk, bran $28.50@29, shorts $30@30.50, middlings $29@29.50.
Ft. Worth: Demand falling off; supply adequate; bran, bulk $37.50, burlaps $42.50; gray shorts, bulk $39, burlaps $42.50; bulk middlings $37.50, delivered Texas common points; bulk bran $1.50 higher, sacked bran $1 higher; bulk shorts $3 higher, sacked shorts $1 higher; middlings $1 higher, compared with previous week.
Chicago: With no signs of settlement of labor troubles in eastern feed market, there was a further turn to Chicago as source for millfeeds; prices for bran up $3 ton, middlings up $1.50@2, and red dog, largely in a sympathetic way, moved up 50¢ ton; quotations: standard bran $34.50, standard midds. $35.50 and red dog $42.
St. Louis: Demand fair; trend easy; supply ample; sacked, bran $39, shorts $39; bulk, bran $33.50, middlings $34.50.
Omaha: Demand fair; trend easy; supply ample; sacked bran $34.50; sacked gray shorts $34.50; bulk standard midds. $30; all Omaha basis.
Wichita: Demand fair; supply sufficient; Sept. 12, basis Kansas City: bran $33.75@34.25, shorts $33.75@34.25, sacked; both bran and shorts advanced $2 compared with the preceding week.
Memphis: Demand poor to fair; trend steady; supply ample; white bran $36.70, gray shorts $37.70, standard $36.70.
Louisville: Demand fair; trend strong; supply good; bran $45.10, mixed feed $45.60, shorts $46.60.
Cincinnati: Demand fair; trend higher; supply adequate; bran $40, middlings $41.
Boston: Demand active; supply tight; bran $45 bulk, $45.50 sacked.
Buffalo: Local supplies virtually dried up because of grain elevator employees strike. No prices quoted, but it was reported that the week's rise was $1@3. Mixers have a one to four week inventory.
Philadelphia: Demand and supply fair; trend unsettled; bran $44, standard midds. $45.50, red dog $50.
Ogden: Supply ample; to Utah and Idaho: red bran and mill run $35, middlings $40; to Denver: red bran and mill run $42, middlings $47; to California: red bran and mill run $42.50, middlings $47.50, f.o.b. San Francisco and Los Angeles.
Denver: Demand good; trend steady; supply ample; shorts $37.25, bran $37.25, mill run $37.25.
Portland: Demand slow; trend steady; supply adequate; $36@37.
Seattle: Demand fair; trend steady; supply ample; $38, delivered common transit points, carlots.
San Francisco: Demand slow; supply ample; millfeed $45, red bran $46.
Los Angeles: Demand slow; trend firmer; supply adequate; standard mill run $44.50@45; red bran $47.50.

MINERAL FEED

Seattle: Demand fair; trend steady; supply good; mixer-mineral $48, all-purpose mineral $85; both ex-warehouse, sacked.
Portland: Demand good; trend steady; supply adequate; $44@45, sacked.
Ogden: Supply good; $113 ton in 50 lb. blocks; $103 ton, granular, 50 lb. bags.
San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.
Wichita: Demand good; supply sufficient; all-purpose with iodine, 50 lb. blocks $97.50, 100 lb. bags $92.50, f.o.b. plant.
Ft. Worth: Demand fair; supply adequate; all-purpose granules $90, block $70; mineral phosphorus 6% granules $106, block $113; cattle-sheep mineral 7% phosphorus granules $100, block $107; hog mineral phosphorus 3½% granules $87, phosphorus 2% $77 (all in 50 lb. paper bags).
Sioux City: 50 lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $1 each.

MOLASSES

Louisville: Demand fair; trend steady; supply normal; 11½¢ gal., tank car lots, Gulf ports.
Los Angeles: Demand excellent; trend steady; supply ample; $21.50, f.o.b. tank cars; $21.75, f.o.b. tank trucks.
Minneapolis: Demand good; supply ample; $30, tank truck, delivered.
Kansas City: Demand fair; trend firm; supply ample; blackstrap 10½@11½¢ gal., f.o.b. New Orleans.
New York: Demand fair; trend slow; supply adequate; 14¢ gal., Albany; 13¾¢ gal., Baltimore and New York; $28 ton, Buffalo.
Atlanta: Demand fair; trend steady; supply limited; citrus $18@20, f.o.b. Florida processing plants.
Buffalo: Demand fair; trend steady; supply adequate; 14¢ gal., f.o.b. Albany.
St. Louis: Demand slow; trend steady; supply adequate; 11½¢ gal., tank car, New Orleans.
Denver: Demand fair; trend steady; supply ample; 10½¢ gal., New Orleans; $39.95 ton, Denver.
Memphis: Demand fair; trend higher; supply ample; blackstrap 11½¢ gal., tank car, f.o.b. New Orleans, and $26.50 ton, delivered Memphis, truck.
Seattle: Demand fair; trend firm; supply good; $21.25, f.o.b. Seattle, tank truck lots.
Boston: Demand fair; supply ample; 14¢ gal., in tank cars.
San Francisco: Demand and supply good; $21.75 ton, f.o.b. cars, Richmond, Cal.
Ft. Worth: Demand fair; supply sufficient; blackstrap 12¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $26.80, seller's market price on date of shipment.
Milwaukee: Demand fair; supply ample; trend unchanged; blackstrap 10½¢ gal., f.o.b. New Orleans.
Cincinnati: Demand fair; trend steady; supply adequate; 10½@11½¢ gal., New Orleans.

NIACIN

New York: 50% $1@1.20 lb.

OAT PRODUCTS

Chicago: Demand fair; trend firm; supply moderate; reground oat feed $15; No. 1 fine ground feeding oatmeal $70; feeding rolled oats $74.
Minneapolis: Irregular market, some items up, others steady or down; feeding rolled up $1 to $76, sacked; feeding oatmeal steady at $64, sacked; pulverized off $1 to $41.50; reground oat feed steady at $24, sacked; crimped up $1 to $59.50, sacked.
Seattle: Demand good; trend firm; supply fair; .38 lb. or better, new crop $54, delivered truck lots.
Philadelphia: Pulverized whites, demand slow, supply fair $48.50; domestic, demand slow, supply light $24.80; Canadian oat feed, demand slow, supply light $28, sacked, nominal.
Boston: Demand fair; supply adequate; white pulverized $55@56; reground oat feed $29.
Ft. Worth: Demand slow; supply sufficient; 10% protein oat millfeed $42.20; reground $37.20, sacked.
Louisville: Demand fair; trend stronger; supply normal; reground steady at $25.80; rolled oats, strong $80.80, up $1; feeding oatmeal, steady $76.80; pulverized oats, easy $51.30, off 50¢; crimped oats, easy $64.30, off 50¢; all sacked.
Portland: Demand fair; trend firm; supply tight; white oats No. 2 extra heavy $54@54.50.
Memphis: Demand fair; trend steady; supply ample; 3½% protein, reground oat feed $24.25.
Los Angeles: Demand slow; trend unchanged; supply adequate; local production, pulverized $64, sacked.
Cincinnati: Demand slow; trend steady; supply adequate; pulverized white oats $45@52.50.

OYSTER SHELL

Boston: Demand and supply steady; in paper $26.05.
Louisville: Demand slow; trend steady; supply good; in 80 lb. paper sacks $23.45, in 50 lb. paper sacks $23.70, in 25 lb. paper sacks $25.95.
Los Angeles: Demand steady; trend unchanged; supply ample; $15.40, sacked.
Seattle: Demand and trend steady; supply good; $36, sacked, delivered carlots.
Portland: Demand fair; supply adequate; trend unchanged; $27@35, sacked.
San Francisco: Demand fair; supply ample; local $15, eastern $26, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; 80 lb. bags $23.85; 80 lb. bags $24.10; 25 lb. bags $26.35.

PEANUT OIL MEAL

Atlanta: Demand fair; trend steady; supply limited; 45% $56 for expeller, $51 for solvent, f.o.b. Georgia and Alabama producing mills.
Milwaukee: Demand and supply fair; trend unchanged; 26% $42 sacked, $38 bulk, both Chicago basis.

PEAT MOSS

Los Angeles: Demand steady; trend unchanged; supply ample; Canadian 5.6 cu. ft. bales $3.65.
Seattle: Demand fair; trend firm; supply good; $2.85 bale, delivered truck lots.
Portland: Demand fair; trend steady; supply ample; $3@3.15 for a 5.6 cu. ft. bale.
San Francisco: Demand and supply fair; $3.65 a bale.
Philadelphia: Demand slow; supply fair; $2.85 a bale, f.o.b. pier.
Boston: Demand and supply steady; $3.15 a bale.
Cincinnati: Demand and supply good; truck loads $3.45 a bale, f.o.b. Cincinnati.
Chicago: Demand and supply fair; trend firm; standard 7½ cu. ft. bale $3.80.

POTASSIUM IODIDE (U.S.P.)

Chittenango, N.Y.: Demand good; trend firm; supply ample; standard blends, 90% KI, 10% stearate or carbonate mixture: 100 lb. drums $1.25½ lb.; 200 lb. and up $1.23½ lb., all delivered.
Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250 lb. drums $1.35; 200 lb. in 100 lb. drums $1.35; 100 lb. drums $1.38; 25 lb. drums $1.41, f.o.b. Cincinnati.

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POULTRY BY-PRODUCTS

Atlanta: Demand fair; trend steady; supply ample; meal $71, f.o.b. Georgia and Alabama processing plants.

Los Angeles: Demand fair; trend steady; supply adequate; $1.25 a unit of protein, sacked.

Boston: Demand fair; supply tight; $70.

Ft. Worth: Demand fair; supply sufficient; 65% protein $77.50@80, nominal, sacked, f.o.b. north Texas plants.

Salisbury, Md.: Meal demand good; supply ample; $78, f.o.b.

RIBOFLAVIN

New York: $40 kilo in 4 and 16 gm./lb. mixtures.

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gm. in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Atlanta: Demand fair; trend steady; supply limited; $43, sacked, delivered.

Los Angeles: Demand limited; supply very limited; trend steady; California production, high fat content, bran $49@50, sacked, nominal.

San Francisco: Demand good; supply ample; bran $43, polished $47, both sacked.

Ft. Worth: Demand good; supply scarce; rice bran $34@35, f.o.b. south Texas rice mills, sacked; hulls $4.50, sacked, f.o.b. September delivery.

SCREENINGS

Minneapolis: Supplies still tight, but demand only fair; trend fairly steady; Canadian up 50¢ from last week to $19.50, Duluth; domestics in same ranges which have prevailed for several weeks; lights $8@12, mediums $13@20, heavies $21@30; 15% flax screenings, steady at $32.

Buffalo: Demand and supply fair; trend steady to lower; ground, sacked $33.25, New York, lake and rail; unground, bulk $22.50, New York.

Chicago: Demand improved; trend higher; supply moderate; ground grain screenings $32.40; Canadian $24.90.

Cincinnati: Demand good; trend steady; supply adequate; unground grain screenings $20@21, Cincinnati.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

(Sacked

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.88@25.
Memphis: $22.20@22.47.
Minneapolis: $25.93@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.27.

SORGHUMS

Los Angeles: Demand steady; trend unchanged; supply adequate; milo $2.10 cwt.

Seattle: Demand fair; trend steady; supply good; milo $47, delivered carlots.

Ogden: Supply ample; milo $43@44.

Ft. Worth: Demand fair; offerings increasing; No. 2 yellow milo $1.90@1.92 cwt., delivered Texas common points.

SOYBEAN OIL MEAL

Milwaukee: Demand fair; trend strong; supply adequate; $54, Decatur.

Memphis: Demand poor; trend steady; supply ample; prime 44% solvent $59, f.o.b. Memphis.

Boston: Demand fair; supply ample; 44% $52, 50% $57, both f.o.b. Decatur.

San Francisco: Demand fair; supply ample; $76.50.

Ogden: Supply ample; 44% protein $70@72; 50% protein $75@77.

St. Louis: Demand slow; trend easy; supply ample; 44% $57.

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FEED INGREDIENTS
What Do You Need?
—Jerry Parks
633 Board of Trade
KANSAS CITY, MISSOURI

Atlanta: Demand and supply fair; trend weak; 44% $62, delivered.

Chicago: Due to pressure of offerings from resellers who apparently got a shock from the government crop estimates on soybeans, asking prices have been trimmed back rather substantially; quotes are down $1.50@3 for the week; Decatur basis, 44% protein, unrestricted billing $54 and eastern trunk line $51.50; 50% protein unrestricted $58 and eastern trunk line $55.50.

Denver: Demand fair; trend firm; supply ample; 44% $65, Denver.

Kansas City: Demand slow; trend easier; supply ample; 44% solvent process $50@51, Decatur.

Seattle: Demand good; trend firm; supply ample; $75, delivered carlots.

Philadelphia: Demand and supply fair; 44% $53.50, Decatur.

Wichita: Demand good; supply ample; 44% $64, 50% $70, sacked; 44% $61, 50% $67, bulk, f.o.b. Wichita.

Portland: Demand fair; trend higher; supply tight; $75.90.

Ft. Worth: Demand good; offerings light for immediate shipment; 44%: $65 first half October, $63 last half October, first half November, $63.50 last half November-December; 50% $70.50 September, $71 first half October, $69 last half October, first half November; $69.50 last half November-December.

Louisville: Demand fair; trend strong; supply ample; $65.70.

Los Angeles: Demand steady; trend firmer; supply light; $75.90@76.90.

Omaha: Demand fair; trend steady; supply ample; 44% $57, delivered Omaha.

Cincinnati: Demand poor; trend steady; supply adequate; $55, Decatur.

Minneapolis: Demand fair; supplies adequate; 44% solvent steady at $48.50, Decatur; 50% solvent steady at $53.50, Decatur.

TANKAGE

Chicago: Demand fair; trend steady; supply ample; 60% protein $77.50, sacked.

Kansas City: Demand slow; trend steady; supply ample; 60% digester $70.

St. Louis: Demand fair; trend steady; supply ample; $70.

Louisville: Demand fair; trend steady; supply good; 60% $75@80, sacked.

Wichita: Demand fair; supply sufficient; 60% $80, f.o.b. plant, sacked.

Ft. Worth: Demand fair; supply ample; 60% digester $75, sacked, Ft. Worth.

Omaha: Demand good; trend strong; supply plentiful; $75.

St. Paul: Slight undertone of weakness, but mostly at same level as week before, sacked $72@74, bulk $68@71.

Cincinnati: Demand fair; trend steady; supply ample; 60% digester $72.50, Cincinnati.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; supply limited; 5½¢ lb., f.o.b. south Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; 50 lb. or more $1.45; less than 50 lb. $1.50; freight allowed to destination.

WHEAT GERM MEAL

Buffalo: Too scarce to quote.
Minneapolis: Steady market; $59, jutes.

MINNESOTA

(Continued from page 5)

ter," Dr. R. J. Meade of the animal husbandry department said.

Dr. Meade discussed the influence of various feeding methods and ration modifications upon swine carcass quality.

"Increasing the protein level causes some increase in cross sectional area of the longissimus dorsi, but this effect is minor, or negligible, between adjacent protein levels within the range normally recommended for growing-finishing swine," Dr. Meade said.

Several recent experiments demonstrate that when swine are fed rations containing "normal" levels, that there is not a general increase in the percentage of the four lean cuts or in the size of any one cut. He pointed out a trend toward a slight increase in the percentage of four lean cuts with increasing protein level, and also a trend toward an increase in the area of the loin eye as measured at the 10th rib.

"The percentage change due to use of added protein is not usually sufficient to bring about a large enough increase in the selling price of the hog to offset the cost of the additional protein supplement," said Dr. Meade.

He said that amino acid balance and amount appear to play a definite role in muscle tissue development, particularly in those cases where rations are markedly deficient in one or more of the essential amino acids.

Carcass composition can be altered by the use of fibrous rations, Dr. Meade said. If high levels of bulking ingredients are used, the dressing percentage of the pig will be reduced and the quality of the carcasses may be inferior, he added.

On bulky rations, Dr. Meade commented that "the added cost of the ration due to the use of more total protein or due to the need for more total feed when bulky rations are used may be such as to obviate the possible increase in carcass value."

He said that antibiotics, "per se," "do not appear to exert any favorable, or unfavorable, effect upon carcass quality," and added that the use of hormones "has not proven to be an effective and efficient means of improving carcass quality."

FEEDING BEEF CATTLE FOR QUALITY BEEF PRODUCTS—Cattle feeding regimes do affect carcass quality, Dr. O. E. Kolari of the animal husbandry department said.

Dr. Kolari discussed factors that may influence carcass characteristics when cattle are fed for equal lengths of time in drylot, including: Rate of wintering gain, creep feeding, feeder grade, pasture or drylot fattening, amount of protein fed, amount of feed fed and concentrate to roughage ratio.

"Shoppers look for tenderness, juiciness and flavor when they buy steak," said Dr. Kolari. "Yet the effect a feeding program has on these characteristics is only indirectly noted. Instead, studies are reported largely in terms of carcass grade."

Carcass grade is related to fatness, Dr. Kolari said, which, in turn, tends to go with juiciness and tenderness. This means grade is generally a measure of carcass quality, he added.

Dr. Kolari cited research work done around the country which brought out such points as these:

Cattle fed for longer periods usually have carcasses grading higher than short-fed cattle on similar rations.

Carcasses of cattle fed in drylot tend to grade higher than those of animals fed the same length of time on pasture.

For best carcass quality, protein content of cattle rations should range from 9½-11%.

Full feeding grain usually results in higher carcass grades and juicier—and perhaps even more tender—cuts than limited grain; especially with younger cattle.

The effect of fat content in feed is still a question; studies do not all give the same result.

A period of slow growth, for example when range cattle are wintered on a minimum of feed, usually won't lower carcass grade.

Feed additives at proper levels normally have little or no effect on carcass quality.

CHARACTERISTICS OF QUALITY CARCASSES—Quality in meats is dependent on a large number of factors and may be influenced by all stages of production and processing, Dr. W. J. Aunan of the animal husbandry department told the group.

Dr. Aunan noted that changes in types, weights, grades and ages of livestock going to market from time to time reflect both consumer likes and dislikes at the retail counter and efficiency of meat animal production.

He pointed out that the reduction in age and weight has been important in the increase in quality of beef marketed. He noted that today beef comes from cattle within the narrow range of 16-24 months of age and that 70% of the beef produced comes from cattle fed in the feedlot. A third factor he noted was that supply is more uniform throughout the year.

He said a meat-type beef carcass should possess at least 2 sq. in. of ribeye area and no more that 0.1 in. fat cover over the ribeye per hundredweight of carcass and a marbling score equivalent to minimum choice.

"A meat-type pork carcass from a 200-lb. hog should have at least 4 sq. in. of loin eye area, not more than 1.6 in. of back fat (average) and measure at least 29 in. in length," he said.

FEEDING FOR EGG QUALITY—Dr. Paul A. Thornton, associate professor, University of Colorado, said that "research which has been completed indicates that the diet may have some effect on specific characteristics of the egg."

He said, "It also appears that the reduction of certain quality factors due to environmental stress may be alleviated by nutritional means. Yolk color is readily controlled by nutritional means. It has also been shown that the presence of certain animal protein in the diet tends to bring about a larger egg with an improved interior quality."

The Colorado professor stated, "Recently it was observed that blood ascorbic acid levels were lower in chickens when the metabolic rate was decreased. This suggests that the chicken loses the ability to synthesize sufficient quantities of this vitamin under such conditions. Supplementation of vitamin C to the diet has been shown to improve egg shell thickness during the warm months of the year. Thus, it appears that this vitamin may be needed under certain conditions." However, he indicated, more research is needed in this area.

He stated that feeding of high levels of vitamin A, vitamin B_{12} and high levels of dehydrated alfalfa meal in the presence of adequate vitamin A has resulted in a lower percentage of blood spots. Recent reports also have indicated the value of vitamin K.

The researcher indicated that production of eggs with desirable shell thickness is dependent on adequate levels of calcium, phosphorus, vitamin D_3 and manganese. "Under high temperature stress the shell often becomes thin despite the presence of these nutrients," he said. "It has been shown that increased calcium levels will partially maintain shell thickness under temperature stress."

EGGS CRITICALLY EVALUATED—"Eggs are one of the most critically evaluated food items purchased by the housewife," Dr. Milo H. Swanson, associate professor in the University of Minnesota poultry husbandry department, told the conference audience. Because of this fact, he said, "it is quite important that she be consistently supplied with top quality eggs which will maintain her confidence and demand."

He cited the definition of a quality egg as "one which gives no consumer reason for complaint." He indicated that it is "quite apparent that 'quality' and 'freshness' are not necessarily synonymous terms. Our quality egg must not only be one that makes the consumer happy, but one that our marketing agencies can handle with a minimum loss and least cost. This means strong shells, uniformity of quality and the ability to retain that quality in the channels of trade."

He pointed out a number of quality requirements which gave little con-

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cern just a few years ago. They are: Shell mottling, yolk mottling and prominent chalazae. He commented, "Increased automation in grading and handling eggs is demanding quite a different quality egg than we were marketing in the 1950's."

Dr. Swanson said, "To obtain volume production of top quality eggs in the Upper Midwest will require the concerted cooperation of every segment of the industry."

CONSERVATION OF QUALITY IN EGGS—Dr. Robert W. Berg, extension poultry specialist, University of Minnesota, told the feed men, "Now it is up to all of us to make the farmer realize the importance of conserving the quality put into the eggs by the hen. No magic feed formula can do this for us. We need to sell a complete program and I am sure we will have a satisfied producer."

The specialist further commented that many producers have the idea that they are producing good quality eggs but are not getting credit for their efforts. They have eggs for breakfast and sell a few to their friends. With the comment "we have never eaten such good eggs," the producers get the idea that it must be the other fellow's eggs that are bad.

The problem—the farm wife takes her eggs and those few for sale to friends from the top of the basket or case. Those are today's or yesterday's eggs. Dr. Berg said the point of conserving the quality after eggs are laid is hard to get across to producers and small egg buying stations.

NUTRITIONAL EFFECTS ON MILK—W. A. Olson, research fellow, University of Minnesota department of dairy husbandry, told the feed men that "aside from the bacteriological quality of milk, most of the other quality considerations are related in part to the nutrition of the cow."

He indicated this area has not been a common field for investigation although it is known that energy, protein, vitamins and minerals in milk can be altered by feeding practices.

The researcher related, "The solids-not-fat portion of the milk is directly related to the plane of nutrition. With cows that have been moved from a plane of underfeeding to marked overfeeding, there have been increases of up to 0.8% in solids-not-fat.

"With alteration of ruminal activity by feeding a small amount of roughage or a ground roughage diet, investigators have produced a striking reduction in butterfat percentage and a shift in fatty acid distribution. Only slight temporary increases in milk fat percentage over the normal have been produced by high-fat rations.

"The esthetic quality of milk is influenced by feed. Cows on a carotene-rich diet produce highly pigmented milk fat. Milk may have an off flavor due to certain feeds or weeds."

Turning to veal, Mr. Olson said, "Some attempts using filled milk for calves have been successful in the production of veal which did not differ from whole milk fed veal in quality. At Illinois, Tributyrin lard has been used with good success as a substitute for butterfat.

"The production of quality veal has always been considered to have a nutritional basis. The question of economical production of high quality veal from other than whole milk is far from settled."

ELEVATORS

(Continued from page 6)

terms of grain storage agreements and similar contracts.

3. Analysis of the various ways in which government grain operations are, or may be, conducted to arrive at recommendations as to the best procedures in the public interest.

4. Direction of an information program designed to bring about a fuller understanding by the American public of the value and importance to the nation of the country elevator marketing system.

Charles Force, Kalamazoo, Mich., president of the Grain and Feed Dealers National Assn., told the committee in its meeting that recent months have brought abundant proof of the industry's great value to the nation.

"Without the intelligent and efficient work of some 11,000 commercial warehousemen during the 1960 deluge of grain supplies, the government's price support and commodity programs would have collapsed into chaos," he said.

"When our industry was being criticized in the Symington and Fountain committee earlier this year, very little credit was given for the absolutely vital service we perform in making the government programs work.

"I congratulate your committee on your determination to plan and act constructively now, so it will not be so easy in the future for us to be made a political football."

Committee members attending the meeting were: Leland Miller, chairman, Cedar Rapids, Iowa; Walter Blanton, Carrollton, Texas; Leo Carlin, Minneapolis; Phillip Collins, Woodland, Cal.; R. T. Creekmore, Indianapolis, Ind.; David Crutchfield, Yeoman, Ind.; Bruce Hagemeister, Hemingford, Neb., and Ralph Hegman, Minneapolis.

Other members of the country elevator committee present at the Chicago meeting were: L. A. Laybourn, Salina, Kansas; Warren Le Bourveau, Mathis, Texas; T. R. Magowan, Gordon, Neb.; C. Langdon McMillan, Minneapolis; Frank Miller, Milford Center, Ohio; Floyd Poyzer, Amenia, N.D.; Larry Smith, Lake Odessa, Mich.; Frank Stauffer, Chickasha, Okla.; Homer Sturm, El Paso, Ill.; J. D. Urquhart, Lind, Wash.; J. G. Waskom, Jr., Marked Tree, Ark., and William Wiese, Champaign, Ill.

FLOCKS CUT

(Continued from page 1)

versal of this trend (which is related to the popularity of lighter breakfasts and strong competition from other breakfast foods), the attainment of reasonable egg prices to producers will depend upon adjusting the egg supply to the current demand," Mr. Karpoff commented.

The economist called attention to figures showing that the number of chickens being raised this year for laying flock replacement will be the smallest since records were begun in 1925. (The number is down about 15% from 1959.)

"And in view of disappointing developments in the demand for eggs," he continued, "this has become an urgent necessity. The smaller laying flock in prospect for 1961 is a step in the direction of adjusting supply to demand."

Enough Eggs Seen

Although the new season's laying flock is down, Mr. Karpoff said, there will be enough eggs in 1961—not only when measured against the 1961 appetite but also by longtime historical standards.

One of the reasons for expecting a per person supply as large as the prewar average (despite the smaller flock) lies in the continuing production increases scored by the average layer. She laid 206 eggs in 1959, which is 3 doz. more than the 1949 average. So far in 1960, the production record per bird is slightly ahead of 1959. It is likely to continue its rise in 1961.

Mr. Karpoff noted that, because of the cutback in layers brought on by extremely low egg prices, prices this year have averaged above a year earlier and, as has been forecast, they will continue higher. But, he added, "not at a level that would justify building up flocks."

Mr. Karpoff commented, too, on the situation in replacement pullets among different areas. Replacement pullets are down this year in just about every state. The decreases from a year ago are fairly uniformly distributed, except in the western states, where the 5% decrease is lighter than elsewhere. In other regions, the average decreases are in the narrow range of 15 to 19%.

This year's cut shows greater uniformity than was the case last year, Mr. Karpoff pointed out. Last year's over-all cut of 7% was the average of a considerable range of changes in the regions. The western states increased 3% last year, and the south Atlantic states increased 2%. The south central states declined less than 2%. Other declines were larger—northeastern states, 10%; west north central, 12%, and east north central, 17%.

The whole situation, Mr. Karpoff observes, adds up to another decline in egg production in 1961. But he cautions that unless demand for eggs can be improved, the reductions may not be enough to assure egg producers that they are "out of the woods." And if baby chick purchases next year are stimulated too much by the higher egg prices this fall and winter, there can be a severe price reaction beginning late in 1961.

EGG SET

(Continued from page 1)

previous week in 15 of the 22 states. Those with appreciable decreases included Alabama, Pennsylvania, Maryland and Mississippi. Chick placement decreases were reported in 12 of the 22 states. Those with appreciable decreases include Alabama, Delaware, North Carolina and Pennsylvania.

Prices are holding in spite of the increased setting and placement activity this year over last. The average price paid on the farm last week in Delamarva was 17.05¢ per pound. A year ago it was 16.87¢. A week earlier it was 17.22¢.

QUAKER OATS

(Continued from page 1)

to stockholders on the fiscal year ended June 30. The company's net income for the year was $13,523,132—up from the total of $13,166,850 the previous year. Sales were $321,842,899, compared with $322,162,721 in fiscal 1959.

"Due to prolonged low egg and broiler prices this past year, the mixed feed industry of the country has suffered," it was pointed out in a report to stockholders by R. Douglas Stuart, chairman of the board, and Donold B. Lourie, president.

"Our margins, like those of others in the field, have been affected adversely, but we can report that in the areas which we are now serving, we have enjoyed the largest feed volume in our history.

"Revolutionary changes in animal agriculture continue. Fewer, larger and more specialized farms require new and improved service. Bulk handling from mill to users and the consumption of high protein concentrates are increasing at a rapid pace. Larger feed accounts require greater credit extension and call for careful supervision. We feel that our credit reserves are adequate."

The report also noted that livestock and poultry experimental farms at Barrington, Ill., are in full scale operation. And new pet food research kennels are contributing to the firm's expanded research program.

The Quaker officials said over-all volume of grocery product lines held at the previous year's levels. In pet foods, Puss 'n Boots cat food had significant volume gains. Ken-L-Ration, leader in the canned dog food field, showed an increase in volume. Chemical sales last year exceeded those of the previous year, the report pointed out.

Over-all sales outside the U.S. were $85 million, slightly more than in the previous year.

The Quaker officials called attention to continuing work in new products and product planning and to developments in foreign operations, including discontinuing of flour milling at Peterborough, Ont., in Canada and decentralization of feed manufacturing to other points in eastern Canada.

The net income for fiscal 1960 was a new record for the company and it represented the eighth consecutive year of increase. After preferred dividends, the net income amounts to $3.40 per share of common stock, compared with $3.29 per share last year.

STRIKE

(Continued from page 1)

this week had the two legal matters transferred to Federal Court. But the companies, in a hearing held Sept. 14, sought to have them returned to the State Supreme Court.

The elevator companies were expected to move immediately for a hearing on their plea for injunctive relief. They contend that the strike by 450 employees is a violation of their current agreements with the union.

Judge Henderson, in remanding the cases to the state court, noted that the federal court "is without jurisdiction to hear and determine a claim for an injunction in the circumstances here presented."

Buffalo's strike-ridden flour and grain industries have been virtually inoperative since Sept. 8. The elevator strike, an offshoot of the Pennsylvania Railroad strike which was settled this week, began Sept. 8 when the Buffalo Terminal Grain Corp., operater of the Connecting Terminal Elevator, laid off 13 members of Local 1286 because the corporation said it couldn't operate as a result of the Pennsy strike. The union contends that so long as there is grain in the elevator, no layoffs may occur under provisions of its collective bargaining agreement.

Buffalo millfeed supplies have all but dried up because of the waterfront strike. And it is believed by some observers here that the dispute, now in the courts, could be carried on for some time. This situation is creating some uneasiness in millfeeds markets. However, despite the supply shortage, millfeed prices haven't climbed as rapidly as might be expected. This week's increase was $1@3 ton, but Buffalo didn't quote prices because no material was available.

Problem for Feed Men

Feed manufacturers, just recovering from production restrictions created by the Pennsy strike, said they had millfeed inventories which would last from one to four weeks.

The grain elevator worker strikes have been a serious problem to off-the-track manufacturers and others with storage of limited capacity.

One analyst said millfeed prices would have spurted if both large and small manufacturers had been in the market at the same time. He said eastern feed manufacturers are playing it cautiously and are replenishing their supplies on a fill-in basis via railroads from the Midwest, which, in some instances, will increase operating costs.

Chicago and Minneapolis millfeed quotations have been jacked up considerably because of the increase in demand for shipments to the East.

TEXAN ELECTROCUTED

CISCO, TEXAS—David G. Alford, 19, was electrocuted recently while working on a storage tank at the Thornton Feed Mill. He was operating an electrically driven speed wrench inside the tank.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
July 9	1,158	424	758	772	107	760	2,176	2,154
July 16	1,155	547	831	800	109	739	1,868	2,233
July 23	1,118	396	752	737	114	924	1,887	2,271
July 30	1,114	438	788	749	84	787	1,785	2,212
August 6	1,132	497	796	773	99	719	1,657	2,109
August 13	1,175	412	721	672	92	750	1,607	2,071
August 20	1,117	422	705	664	104	679	1,740	1,757
August 27	1,091	441	688	645	97	625	1,738	1,858
September 3	1,073	353	798	588	92	627	1,741	1,825
September 10	1,066	400	667	654	104	719	1,573	1,995

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
July 9	1,132	625	3,364	398	7,298	209	4,057	2,705
July 16	1,258	625	3,237	390	7,142	212	3,856	2,511
July 23	1,208	683	3,235	305	6,776	243	3,934	2,463
July 30	1,303	508	3,077	296	6,640	198	3,659	2,191
Aug. 6	1,123	678	3,095	333	6,231	199	3,518	2,183
Aug. 13	1,095	453	3,080	351	6,195	294	3,391	2,059
August 20	1,052	457	2,954	364	5,940	283	3,298	2,112
August 27	931	407	2,850	331	5,969	288	3,176	2,032
September 3	817	413	2,838	302	5,972	245	3,232	1,994
September 10	784	420	2,693	300	5,960	206	3,000	2,022

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1960	Total 22 areas 1959
July 9	4,064	449	2,217	326	331	1,098	36,582	33,667
July 16	4,046	443	2,179	366	283	1,066	35,896	33,881
July 23	3,801	411	2,113	354	234	974	34,933	33,455
July 30	3,642	433	2,126	309	228	985	33,552	32,044
August 6	3,714	350	2,037	302	253	1,095	32,893	31,302
August 13	3,508	343	1,876	276	218	1,054	31,693	31,136
August 20	3,478	383	1,912	318	228	886	30,853	30,402
August 27	3,321	351	1,760	327	180	964	30,070	29,236
September 3	3,104	356	1,703	298	191	961	29,523	27,913
September 10	3,035	356	1,611	233	219	1,020	29,037	26,268

IOWA

(Continued from page 1)

form almost indigestible pellets); dust loss, and segregation or "settling out."

3. Combination resistant to digestion. Examples: Lysine combines readily with sugars to form complex products resistant to digestion; avidin (egg white) combines with biotin.

4. Enzymatic breakdown. Examples: Alfalfa meal carotenase destroys carotene of alfalfa, thiaminase in raw fish destroys thiamine.

5. Light, a significant factor in the stability of vitamin K and riboflavin and in the oxidation of vitamins A and E.

6. Heat, an environmental factor of importance in stabilizing triamine, pantothenic acid and some amino acids.

Dr. Balloun referred to vitamins A and E as being among the most reactive and easily-destroyed microingredients. He said vitamin A "is one of the most costly vitamins . . . and should not be used at high levels because it is damaging to hogs and poultry when fed in excess of an animal's needs."

Natural vitamin E is easily destroyed, too, he said, "but it differs from vitamin A in that it can be added to a ration in excessive amounts without harm to the animal."

Dr. Balloun reported that oxidation—accelerated by heat, light and certain minerals—accounts for considerable chemical breakdown of vitamins A, E, and, to a lesser extent, vitamin D_3, and fats, especially unsaturated fats.

Feeds Should Be Fresh

"Feed doesn't improve with age," remarked Mr. Rohlf. And Dr. Balloun referred at several points to the importance of feeding "fresh" feeds.

Dr. Balloun cited unpublished results of Iowa State experiments to show that the selling and feeding of "old" feeds can lead to trouble for the manufacturer, dealer and feeder.

In one test, chicks on "fresh" feed weighed an average of 292 gm. each at 3 weeks of age, and none of the chicks in this group had died at the end of 4 weeks. However, chicks fed "old" feed of the same formula weighed an average of 188 gm. at 3 weeks and mortality was 100% by 4 weeks of age.

Dr. Balloun said chicks on the old feed died from "obvious vitamin A and E deficiencies." The formula, as mixed, he said, was calculated to provide over 6,000 IU of A, and more than 12 IU of E per pound.

References were made, also, to additional data which indicated that, under usual storage conditions, vitamin A and carotene are destroyed at relatively fast rates, while other nutrients, such as riboflavin, thiamine, niacin and pantothenic acid become less potent at a much slower rate.

Dr. Balloun quoted previously reported research results regarding the stability of carotenoids in alfalfa meal and poultry feeds and the effect of added antioxidants BHT and Santoquin on their stability.

He said W. P. Williams of Texas A&M reported at the recent annual meeting of the Poultry Science Assn. the following data:

1. Effects of antioxidants on loss of carotene from alfalfa meal stored in warm (84-89° F.) and cool (54-55° F.) environments for 8 weeks.

Treatment	Carotene Loss Warm %	Cool %
None	42	7.6
BHT	46	8.2
Santoquin	36	4.5

2. Effect of antioxidants on loss of carotene from mixed feed stored in warm (84-89° F.) environment for 8 weeks. Feed contained 6% untreated alfalfa meal.

Treatment	Carotene Loss Warm %
None	27.5
BHT	20.3
Santoquin	8.5

Stable Ingredients

Certain microingredients appear to be entirely stable in premixes, mash feeds and pelleted feeds under all normal conditions of use, according to Mr. Rohlf. These additives, he said, include riboflavin; niacin; choline chloride; streptomycin; arsanilic acid; 3-nitro,4-hydroxyphenylarsonic acid; methionine; stilbestrol; sulfaquinoxaline; vitamin E acetate, and most all of the various minerals fed.

He listed, also, nutrients which are sensitive to environmental conditions: Vitamin A and D, menadione, procaine penicillin, calcium pantothenate, vitamin B_{12} and menadione sodium bisulfite.

"The stability of such ingredients cannot be simply described," he said, "because of the following reasons:

"1. There are no clear-cut industry standards for some microingredients and products sold under the general name vary markedly in stability. I am referring particularly to vitamin A, but there are other products in the same category.

"2. Feeds will vary in destructive effects on microingredients; for example, moisture and mineral levels.

"3. Pelleting of feed is not a standardized operation due to formula differences and operator techniques."

"Keep an Open Mind"

Dr. Wise Burroughs, Iowa State beef specialist, suggested during a panel discussion of various topics, that feed men "keep an open mind" regarding carotene and true vitamin A requirements. "We've never been sure at Iowa State how much A should be put in supplements," he said.

"My personal opinion is that the cattle feeder make sure he has plenty of vitamin A in his ration. To me it is a wise move for the feeder to spend an extra $1-1.50 per ton to make sure there's enough A present and so that he can forget about the conversion of carotene to true A."

Feed manufacturers are protected against the loss of an effective level of a certain nutrient through the availability of stabilized forms, but, Mr. Rohlf said, there are variations in the stability of a certain vitamin—depending upon the source.

What can a feed manufacturer do to cope successfully with a stability problem? Mr. Rohlf says the best way to start a search for answers is to find out exactly where and what the problem is. Then, he suggests, try to correct the situation in one or more of the following ways:

1. Add an excess quantity or overage of the microingredient involved.

2. Use a more stabilized form of the ingredient.

3. Use an antioxidant—such as BHA, BHT or Santoquin, if not already used.

4. Revise feed production schedules to minimize the time elapsed between production and consumption.

Mr. Rohlf expanded this last point by saying that because feeders sometimes are encouraged—through bulk and large order discounts—to buy more feed than they can use within a short time, there are instances in which manufactured feed becomes stale before it is fed. And this reduces the value of the feed.

"In spite of the fact that a large proportion of feed consumed in this country is pelleted, there is still a lack of information as to how much pelleting affects the stability of certain microingredients," Mr. Rohlf remarked. "One factor that seems to be quite important in this regard is pelleting temperature."

He said manufacturers try to improve stability of problem nutrients in the following ways:

1. Formulate feeds to make pelleting easier; for example, by adding a small amount of fat. "Personally," he said, "I like to formulate a ration for the animal rather than for the pellet mill."

2. Use the correct die size and thickness.

3. Keep feed temperature down by not using an excess of steam.

4. Keep production rate high by reducing the time the feed is in the conditioning chamber as well as in the die.

5. Regulate particle size to finest practical grind—not too fine and not too coarse—so as to speed up pelleting.

6. Be sure the rolls in the pellet mill die are set correctly so as to reduce friction developed in the die.

7. Reduce time that feed is in the die.

8. Make the pellets no harder than necessary.

"There are many factors of pelleting that the pellet mill operator and feed manufacturer can regulate to reduce the temperature of the pellets—not only while they are in the die of the pellet mill, which is most important, but also from the time they leave the die until they are cooled," Mr. Rohlf explained.

"Too high a temperature during pelleting could melt vegetable and animal fats, stabilized wax, fat or gelatin coatings of vitamins and may even melt some of the microingredients themselves. Losses may occur during pelleting due to too high a temperature for too long a time as a result of the pelleting operation. However, these losses when they are recognized are seldom significant when the mills are operated in the correct manner as compared to the advantages of pelleting."

Mr. Rohlf emphasized that the stability of a certain formula is affected by the quality of the ingredients going into the formula. "As related to the stability of nutrients in the ration, feed manufacturers must and should remember that the quality of the ingredients going into the mixed feed is as fully important as the feed formula itself," he said. "In this regard, it is important that the purchasing agent carefully watch the moisture levels of the feed ingredients he purchases."

Mr. Rohlf said it has been established that one feedingstuff may heat rapidly, while another with a higher moisture content may be safe. Also, the presence of a slight excess of moisture in the feed will allow the growth of mold.

"Most of us realize that the bulk of the ingredients purchased on the open market may not be susceptible to heating," he said. "But these same ingredients usually contain enough moisture so that it is almost impossible to prepare mixed feeds containing semi-solid ingredients such as fish solubles or feeding molasses, which are high in moisture, without the mixture being highly susceptible to heating."

Problems at the Farm Level

Mr. Rohlf acknowledged that a supplement may be blamed for lack of certain vitamin stability because a customer is experiencing poor feed efficiency and slow growth or both. However, the true cause of this condition may not be the stability of vitamins in the supplement but inadequacies of the grain or roughage being fed.

"Feeding moldy corn to growing-finishing pigs is a typical example," he said. "Molds that commonly attack the corn kernel, except perhaps Gibberella, are apparently not poisonous to swine. They do, however, consume the substance of the corn and because of this reduce in proportion to the extent of mold damage the amount of nutrients a given lot of corn contains."

Another on-the-farm problem stems from the fact that what may seem to be a vitamin A deficiency in cattle (also in bred cows and gilts) being fed corn silage or allowed to graze on pasture may be nitrate toxicity. Symptoms of nitrate poisoning in cattle may be sore feet, lameness or digestive upsets. Some affected brood cows abort or produce dead full-term calves.

Mr. Rohlf noted that a University of Illinois scientist, Dr. E. B. Earley, has reported that nitrate toxicity may be more of a problem because farmers are planting a higher population of corn per acre and using larger amounts of nitrate and nitrogen fertilizers. These practices increase shade in the corn field. An enzyme in corn, nitrate reductase, has a key role in protein production and it tends to be less active when there is a shortage of light. Nitrate reductase is an enzyme that acts as a valve regulating the reduction of nitrate into protein and if this enzyme is sluggish or overloaded nitrate accumulation in the plant increases the nitrate threat to livestock.

Bearish Air Creeps Into Meal Trade

MEMPHIS, TENN.—Prices of oilseed meal futures were irregular on the Memphis Board of Trade during the past week, with the only gains attributed to a technical adjustment.

Slow oil meal business on the cash market and the government's bearish soybean crop report for September led to a decline in other contracts.

The only advances were made in Eastern Trunk Line soybean oil meal, where prices were adjusted upward, dealers said.

Some dealers had anticipated good business for cottonseed oil meal as new crop cotton was ginned and meal produced. This failed to develop.

Trade sources said that mixed feed business picked up slightly in some areas of the country.

MARKETS

(Continued from page 1)

as 5¢ bu. this week, making the delivered price, middle Georgia, $1.26 bu.

As of Sept. 1, there were only 28,398 tons of citrus pulp in store in Florida and, if movements continue at the same rate, these stocks will be depleted within 30 days. Prices continue firm at $47.50-$50, f.o.b. Florida processing plants, with no offerings.

Central States

Commercial mixed feed manufacturers are reporting that demand is running about in line with general expectations and more or less at a normal pace for this time of the year. In this respect, business has much in common with the preceding month. Higher prices that were put into effect around the first of the month failed to stir up much of any improvement in the demand.

If anything, there was just a moderate increase in running time, and more plants appear to be back on or very close to a 40-hour week than was the case a month or six weeks ago.

While the trade is anticipating some letup in the call from broiler plants, the seasonal step-up in demand for turkey feeds is at hand and is expected to broaden for some time. Observers are looking also for some improvement in the demand for egg mash and dairy feeds.

Demand for cattle feeds is easing off a bit, but holding up well for hogs. The slump in the hog market from the late summer top of $19 down to $16.50 seems to have leveled off and there does not seem to be anything in the immediate picture to cause any fears of a resumption at this time.

Order backlogs for formula feeds could well be heavier than they are but, at the same time, they do not seem to be causing too much apprehension.

South Central

Business in formula feeds continues to move along at a moderate pace, just about in line with expectations for this period of the year. Mill operations, for the most part, are on a four-day capacity basis, although there are a few units able to fill out the full week.

Demand for the general line of feeds is unchanged from last week. However, hog feed sales are reported to be off mildly for most mills. The general opinion is that this is a temporary development. Hog prices slumped almost all through August and it would not be surprising if discouragment over the break caused some hard pressed feeders to limit feed purchases. But the downward trend has been reversed this month and market prices for hogs show a sharp upturn from the lows.

Feed price lists are expected to be a little lower this weekend, a helpful developmnt as buyers are reported to be looking at prices pretty carefully and doing a lot of shopping around for the best values.

Ohio Valley

Following the distribution problems created in many areas of the Ohio Valley by the Pennsylvania Railroad strike, feed manufacturers were gradually resuming more normal operations this week, both with respect to rail deliveries of ingredients and of feeds to retailers beyond trucking range.

An inch or more of rainfall throughout the valley during the last week combined with much cooler temperatures to relieve threats of serious damage to corn and other fall crops, and it is presently anticipated that bumper harvests will be garnered.

While such harvests can be expected to depress sales of certain types of manufactured feeds somewhat, the overall outlook for a good volume of fall and early winter business is considered excellent, several manufacturers said this week. Current retail demands for eggs and all types of meats give substance to these predictions.

Prices this week at area stockyards and at egg and poultry wholesale markets moved within narrow ranges, but are expected to stiffen because of the passing of a month-long heat wave, with resultant benefit to the feed industry.

Mountain States

Dealers report that business is running just about the same as a year ago, although prices are generally lower for the same period. Cattle feeding has not yet picked up as expected. One reason given was that producers are asking too much for their calves and feeders are reluctant to pay the price. But due to the poor conditions of the grass ranges from the prolonged heat and drouth, feeders are expecting more cattle soon.

Turkey feeding is going full blast now. Most birds are nearly full grown and eating more. Turkey feed volume is expected to level off soon as processing plants get started on the 1960 turkey crop.

Pacific Northwest

Oregon, Washington and Idaho formula feed business continued fairly good despite the fact that there have been adequate supplies of feeding grains and fair forage following recent showers and cooler weather.

Trade sources indicated that favorable feeding ratios and continued heavy feeding of grains and concentrates to all classes of animals appeared to keep sales moving. Poultry mashes moved in volume with mixers at Portland reporting that dairy and cattle ration sales were improved.

Feed ingredient quotations were irregular during the trading period. Trading appeared on the slow side, but gains in the value of principal items offset declines for a few minor ones and the average cost was slightly higher at the close.

Soybean meal listings closed $2 ton higher, while copra meal prices were up $1 ton and linseed meal quotes were generally cut by $1.50 ton in slower dealings.

Animal protein feed values were firm; meat meal was in good demand at $1.50 ton higher prices. Whole feed grains featured strength for barley and wheat while milo was quoted $1.50 ton lower as a further adjustment to new crop levels.

Pacific northwest hay listings were considered fully steady to firm at levels that were $1-3 ton lower than a year ago.

Warehouse Burns

ROCKLAND, MAINE—Fire caused an estimated $125,000 damage to a warehouse full of fish meal owned by the Maine Sea Products Co. Richard Hamalainen, general manager, said the warehouse contained 13,000 tons of the meal.

The fire was still burning hours after its outbreak.

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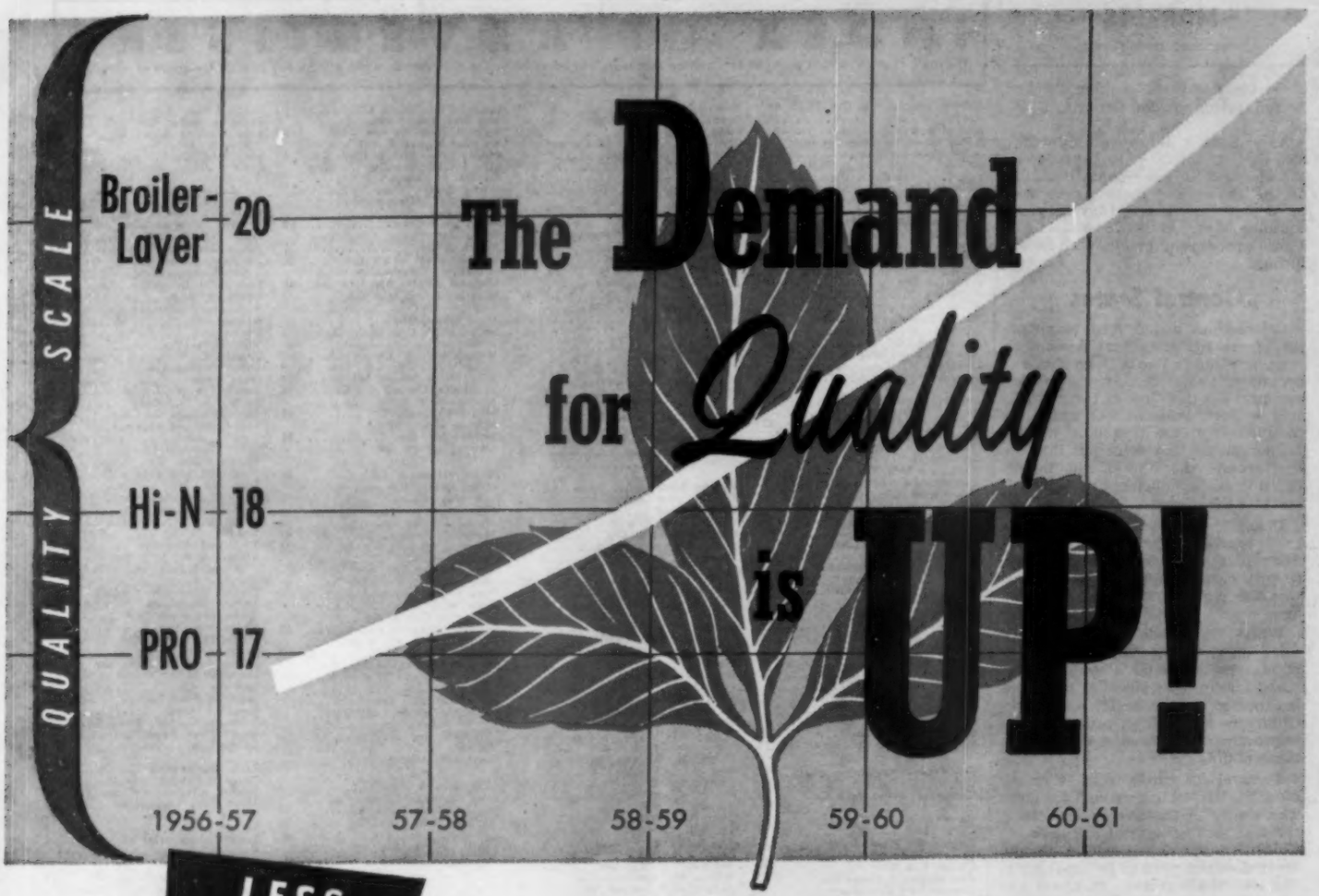

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